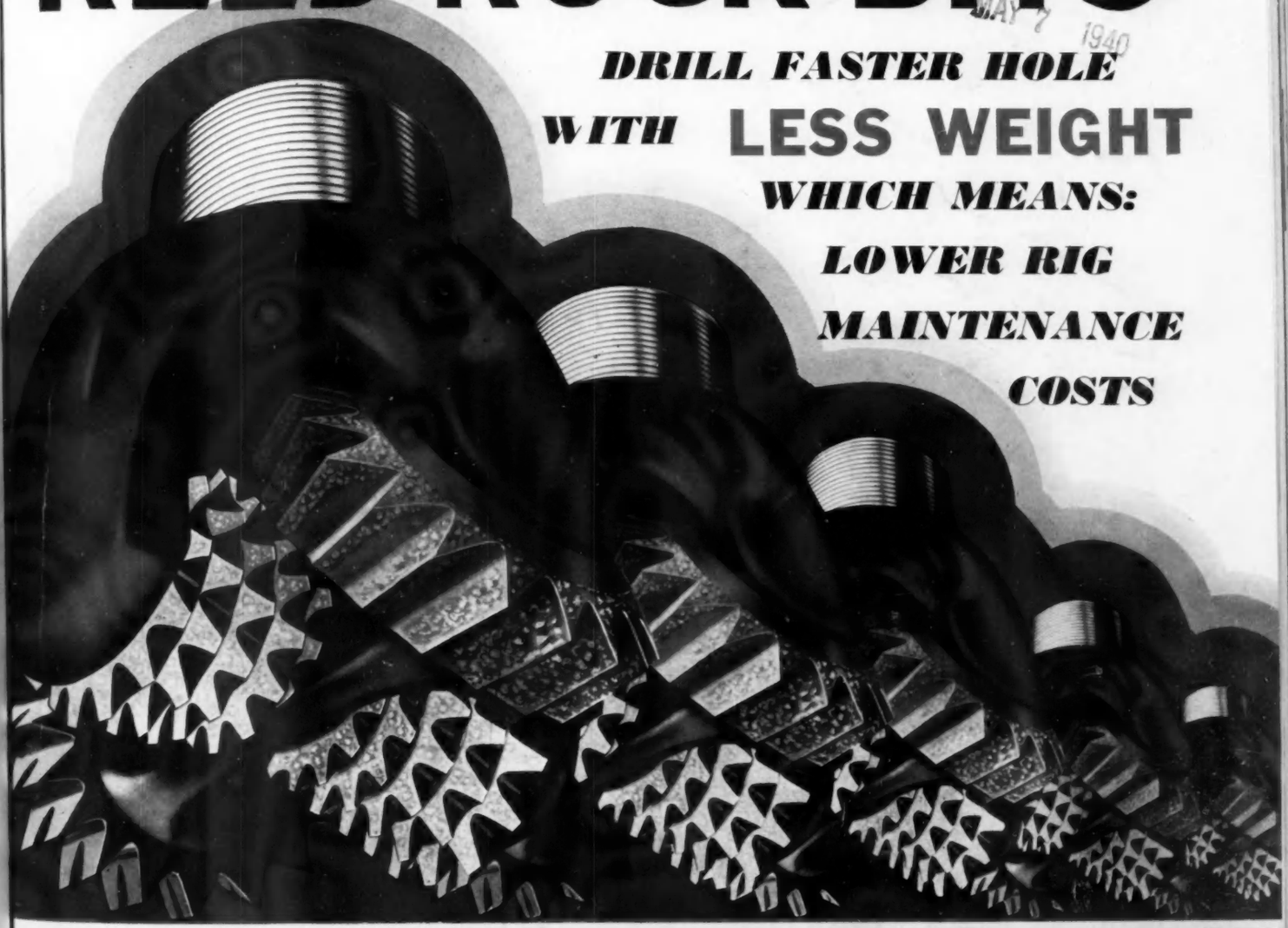
The OIL WEEKLY
OIL and GAS ENGINEERING
INTERNATIONAL AUTHORITY FOR THE PRODUCING AND PIPE LINE INDUSTRY

MAY 7 1940

REED ROCK BITS

DRILL FASTER HOLE WITH LESS WEIGHT

WHICH MEANS: LOWER RIG MAINTENANCE COSTS



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TULSA
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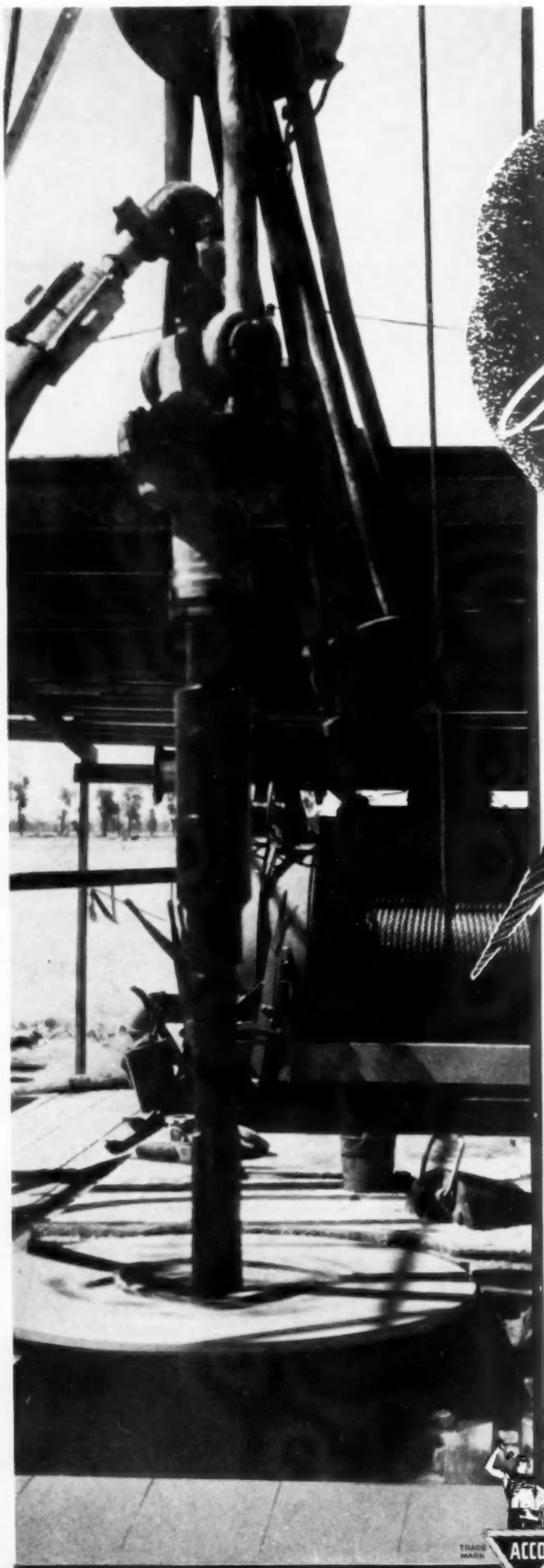
SPEED WITH LESS WEIGHT

REED ROLLER BIT CO.

VOLUME 97
MAY 6, 1940



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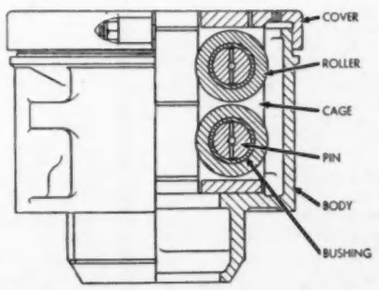

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or refer to pages 165 to 167 of your 1940 Composite Catalog for engineering details and complete description of the BAASH-ROSS Type 2RS Roller Kelly Drive Bushing.

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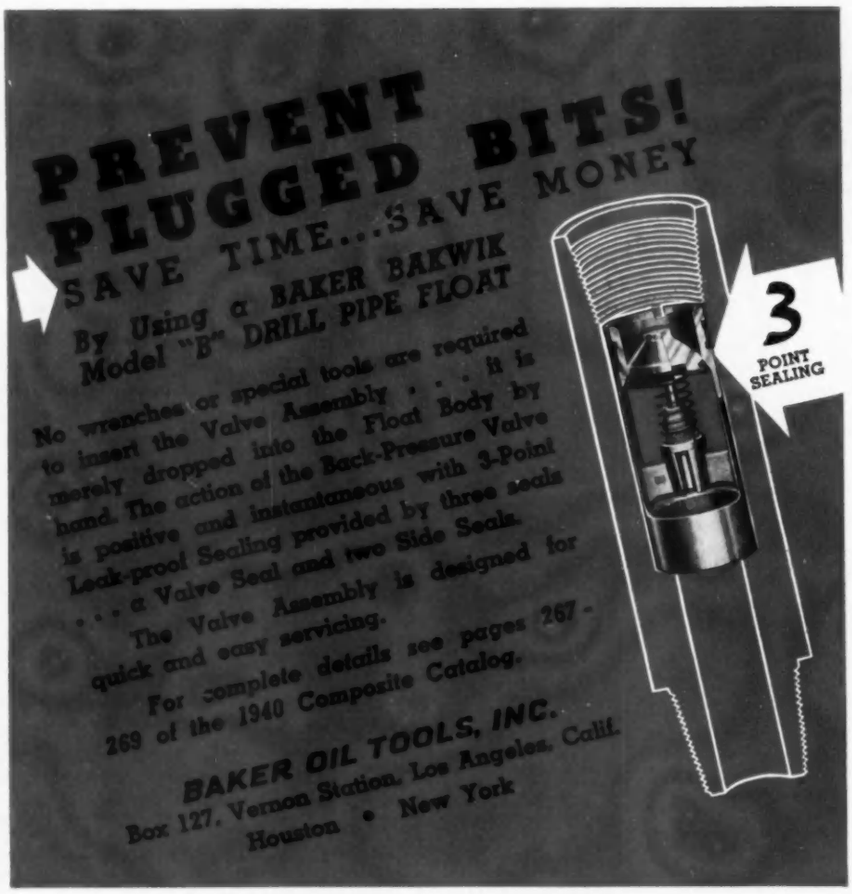
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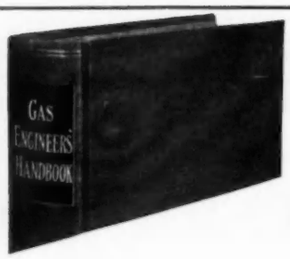

GAS ENGINEERS' HANDBOOK

Prepared by Gas Engineers' Handbook Committee of The Pacific Coast Gas Association, San Francisco, California

Here is a comprehensive and authoritative manual, giving the gas engineer a reference tool comparable to the standard handbooks in other fields of engineering. Now in one volume are brought together a great many of the constants and formulas which the gas engineer uses most frequently in his work. Every phase of the field is covered, including fundamental mathematics; properties of materials, liquids, and gases; heat and combustion; production; testing and measurement; transmission and distribution; and utilization, both industrial and domestic.

For the various constants, latest figures from recognized sources have been used. New material is included on long transmission lines, on the design of distribution systems, on the production and utilization of natural gas and on the production and use of the so-called "liquid" gases. That the effort to make this book useful and acceptable to engineers throughout the industry has been successful is indicated in the endorsement of the Directors of the American Gas Association which it bears, as a "valuable reference book for gas engineers."

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Looking Ahead

WITH THE EDITOR

OIL PRORATION AGENCIES in two important producing states may undergo far-reaching personnel changes in the near future, which may influence their views on production allowables.

In Texas, one of the three present commissioners has announced his retirement, and the other two, although they still have some unexpired time, are campaigning for other state offices. Therefore, it is possible that Texas will have an entirely new commission personnel and their views on allowables might be completely different from the policies previously favored. Since Texas produces about 40 percent of the nation's daily output this could change the industry's picture materially.

Louisiana, which has a new governor taking office, also is expected to have many changes in its conservation department. Just how far these will reach and their attitudes toward the industry will depend upon the men appointed to the positions.

»

BOYLE'S GAS LAWS may be used without the introduction of appreciable error when normal conditions of temperature and pressure exist. But with increasing pressure, correction factors must be applied if gas measurements are to be satisfactory, since some gases are not compressed as much as Boyle's law indicates at high pressures and other gases occupy a smaller volume than this law indicates. These deviations of gases from Boyle's law has become of increasing importance with the discovery of distillate-producing fields, where the abnormal behavior of heavier hydrocarbon gases under exceedingly high pressure and temperature has introduced the relatively new phenomena of so-called "Retrograde Condensation." This is to be the subject of an article ready for publication in an early issue.

»

THE LARGEST EXPOSITION in the history of the oil industry will be the Eleventh International Petroleum Exposition, to be held in Tulsa May 18-25. Twenty-five acres of exhibits featuring from 10 to 15 million dollars worth of equipment will be displayed by approximately 600 exhibitors.

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THE OIL WEEKLY

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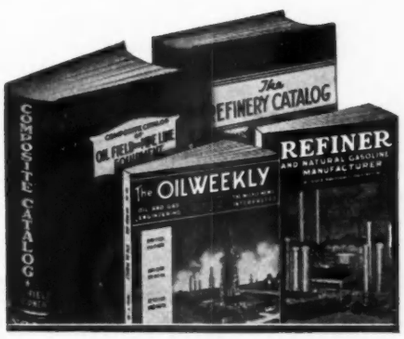

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The Oil Man's Calendar

MAY 6–10	American Gas Association, Natural Gas Section, Houston.
15–17	Natural Gasoline Association of America, Tulsa.
18–25	International Petroleum Exposition & Congress, Tulsa.
20–22	American Gas Association, Technical Section—Production Conference, New York.
27–31	American Petroleum Institute, Mid-Year Meeting, Ft. Worth, Texas.
30–31 June 1	National Oil Scouts and Land Man's Association, Hot Springs, Ark.
JUNE 1	Illinois-Indiana Petroleum Association, Robinson, Ill.
3– 6	National Association of Purchasing Agents, Oil Company Buyers' Group, Cincinnati.
20–21	Pennsylvania Grade Crude Oil Association, Bradford, Pa.
SEPT. 9–13	American Chemical Society, Detroit.
18–20	National Petroleum Association, Atlantic City, N. J.
OCT. 7–10	American Gas Association, Atlantic City, N. J.
7–11	National Safety Congress and Exposition, Chicago.
16–18	Independent Petroleum Association of America, Dallas.
31 Nov. 2	Texas Mid-Continent Oil & Gas Association, Ft. Worth.
NOV. 11–15	American Petroleum Institute, Chicago.

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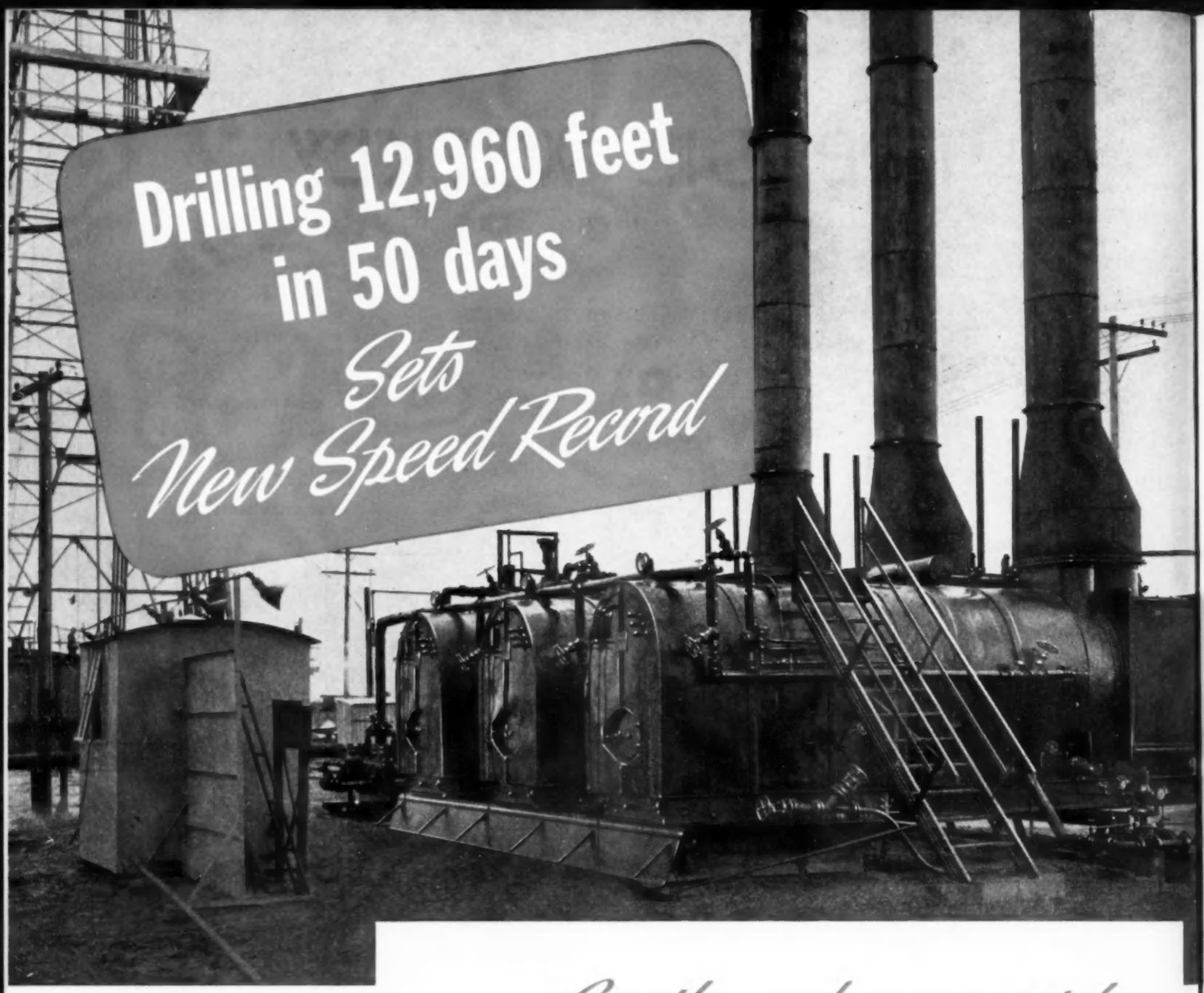


MORE POWER AT LOWER COST — that's the record of these three "Oilwell" Superheated Steam Generators that furnished all the power in making this record.

USES STEAM EFFICIENTLY— this "Oilwell" Engine-driven Power Slush Pump accounted to a large extent for the low fuel consumption.

. . . Another achievement by "OILWELL" Drilling Equipment

WHAT is believed to be a new speed record for rotary drilling has been made by Continental Oil Company in the Wasco, California, field. Drilling of this company's KCL-A5 was completed at 12,960 feet in the almost unbelievable time of 50 actual drilling days.

Ample and dependable power was furnished by three "Oilwell" No. 1 Portable Superheated Steam Generators, supplying superheated steam at 350 lbs. per sq. in. pressure. High-pressure mud circulation, which is also essential to record-breaking drilling, was provided by an "Oilwell" No. 20-P (7¾" x 20") Power Slush Pump driven by an "Oilwell" No. 9 (10" x 9") Vertical Twin-cylinder Steam Engine with variable cut-off.

This equipment *had* to be dependable and of ample capacity for such performance. That it was also efficient is shown by the low fuel-consumption record. The daily average was 609,000 cu. ft. of 1,040 B.T.U. gas. This compares with as much as 2,500,000 to 3,000,000 cu. ft. per day for some rigs in this area. On this basis, with gas at 7½¢ per 1000 cu. ft., the saving is approximately $140 per day.

OIL WELL SUPPLY COMPANY

Branch Stores in All Oil Fields
United States Steel Corporation Subsidiary

THE OIL WEEKLY

MAY 6, 1940

VOLUME 97 NUMBER 9

The Week's Panorama

NOT much progress is being made in reducing the record-breaking stocks of gasoline—a fact that is having an adverse effect on the gasoline market. Service-station prices have further weakened in many sections of the country, and the unfavorable retailing situation threatens the stability of tank-car prices at refineries, which already are comparatively low.

Gasoline Situation . . . . . .

Although the industry normally takes a substantial quantity of gasoline out of storage in April, it increased stocks by a net amount of approximately a million barrels in April of this year.

In the week ended April 27, gasoline stocks were reduced 365,000 barrels, but at the beginning of the week they had been at the all-time peak of 102,817,000 barrels.

Gasoline inventory is at least 15,000,000 barrels in excess of requirements for working stocks, being that much larger than at this time last year, when supplies exceeded needs enough to promote unsteadiness of the markets.

Domestic demand for gasoline is 5 or 6 percent greater this year than last year, but total demand is not up that much, as exports continue far lower than in 1939.

Industrial Activity . . . . . .

April apparently brought some leveling off of the decline of industrial activity, following the extension of the downward trend through March.

The Federal Reserve Board index of industrial production dropped to 103 percent of the 1923-1925 average in March, from 109 in February, 119 in January, and the all-time high of 128 in December. The 103 of March, 1940, compared with 98 in March, 1939. The March index was at 79 in 1938, 118 in 1937, and 118 also in 1929.

War and Oil . . . . . .

The head of a major oil company recently stated that the United States likely would not be able to sell much oil to England and France during the European war, unless their supplies via the Mediterranean were cut off. They will buy where they can pay in pounds and francs, he said, and will draw on Iran and Iraq sources, which can supply them indefinitely, until forced to buy in other currencies, as by the possible entry of Italy in the war against the Allies. The oil executive regarded as only remote the possibility that Russia might seize the Near Eastern fields controlled by the Allies, as only one railroad would be available for transporting the oil northward from the Persian Gulf.

Automobile Sales . . . . . .

Automobile manufacturers sold more vehicles in the first quarter of 1940 than in the initial quarter of any other year since 1929. Sales aggregated 1,259,027 units, including 1,052,581 passenger cars and 206,446 commercial cars, trucks, and road tractors. In the first quarter of 1939, sales totaled 1,017,334 vehicles.

The favorable sales record this year has been made in the face of curtailment of exports of motor vehicles of all types.

Truck Sales Good . . . . . .

Manufacturers of motor trucks expect 1940 to be at least the fourth best year on record and possibly the second best, despite the unfavorable export situation. As compared with 757,006 commercial cars and trucks sold in 1939, it is conservatively estimated that 807,000 or more units will be sold in 1940. The 947,502 sales of 1937 set an all-time record, and the next best years were 1929, with 830,338 sales, and 1936, when 818,377 vehicles were sold.

Cheap Money . . . . . .

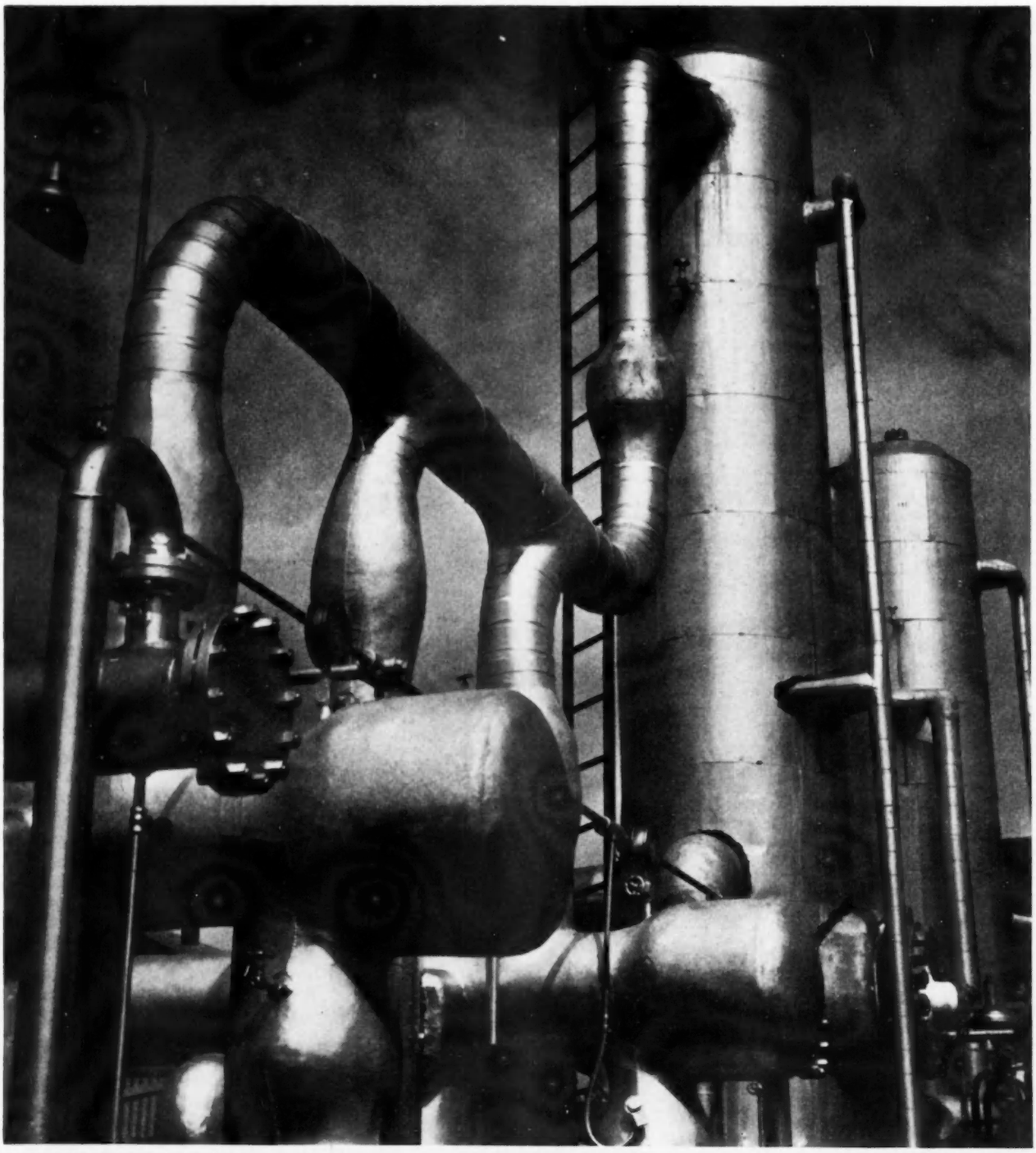
Several major oil companies plan to refinance some of their indebtedness at lower interest rates, despite the fact that exceptionally low rates are involved in present debentures and notes. One company has arranged an 8-year loan, to be paid off in equal annual installments, at 2 percent. Another will obtain longer maturity and possibly lower rates in refinancing serial notes that were sold two years ago, with maturity dates falling within 5 to 9 years, and with interest rates ranging from 1¾ percent for the 5 year notes to 2½ percent for those maturing in 9 years.

Mexican Crude . . . . . .

Reports from Mexico have indicated that Japanese oil distributors have contracted to buy 4,000,000 barrels of Mexican crude, shipments of which will start in the latter part of May. The order was described as the largest of its kind since the expropriation.

Rubber from Oil . . . . . .

The oil business is going into the rubber business. Through subsidiaries, Standard Oil Company of New Jersey will complete and begin operating this year at Baton Rouge, Louisiana, a plant for producing 10,000 pounds daily of Buna synthetic rubber from materials derived from petroleum. The rubber plant will be operated in connection with an established oil refinery of the company.



RECYCLING IS NEWEST CONSERVATION PRACTICE

Recycling is the newest of many conservation practices developed by the oil industry through its vast self-supported scientific research programs, and today millions of dollars are being spent for the installation of such plants. Recycling will make available to consumers larger quantities of petroleum products that otherwise would not be recoverable, thus enlarging the petroleum supply.

Recycling is a process wherein the original reservoir pressures may be maintained in high-pressure distillate-bearing fields by returning gasoline-stripped gas to the producing formation. Prevention of premature bottom-hole pressure declines in fields of this type will prevent receding condensation of formation gases and trapping. Equipment to handle high pressures efficiently is required.

State Regulation of Oil

By GEORGE A. HILL, JR.
President, Houston Oil Company of Texas

GEORGE A. HILL, JR.

Ably presents the viewpoint of the oil industry on federal regulation in the accompanying discussion and likewise questions the effect upon the American people if current attacks on American fundamentals are not repulsed. His remarks were delivered before the round-table conference of the Chamber of Commerce of the United States upon the subject of "The Relation of Government to Natural Resources" and have been abstracted here for oil men who will find his approach and conclusions to this important subject interesting.

THE American oil industry may be fairly considered as one whose origin is strictly American; whose development to its present position of importance, both nationally and internationally, is unquestionably due to private initiative, enterprise and capital in a free competitive economic system; whose achievements, wholly without benefit of public subsidy, have been of incalculable public benefit and service; and whose future contributions to the general welfare will be immeasurably great if collectivism and federal control, under the false label of national planning, are not imposed upon this great industry in substitution for our system of free competitive enterprise.

The accelerated pace of the petroleum industry's advance along technologic, economic and social lines is such that constant, periodic re-examinations are necessary, even for those engaged in the industry, to comprehend the significance of its broad general advance.

How many people realize that in 1919 the daily consumption of crude oil and its products averaged 1,201,200 barrels as compared with the daily consumption of 3,884,500 barrels in 1939. Consumption more than trebled in the twenty-year period.

That is an amazing figure.

Yet it is a figure that can be readily understood.

But those who have considered that enormous and progressive increase in consumption of petroleum and its products, have not realized the more amazing fact that unless the cracking process had been developed, the gasoline consumptive demand since 1920 could not have been satisfied without a 60 percent increase in the total of crude oil that has actually been produced in the intervening period.

When these consumption figures are pondered, it sometimes provokes the uneasy inquiry: What has been discovered in available reserves for future use?

Estimates of Reserves

In 1915, the United States Geological Survey estimated oil reserves of seven and one half billion barrels in all known and possible oil-bearing acreage by whatever method produced, but since that estimate, over nineteen billion barrels have been actually produced, and the latest estimate of proven oil reserves, as of January 1, 1940, is approximately eighteen and one half billions of barrels of oil. In 1925 the American Petroleum Institute estimate of proven oil reserves recoverable by flowing and pumping methods then in use, was five billion barrels, and yet fourteen and one half billion barrels have been produced since that date, with proven recoverable reserves of eighteen and one half billion barrels as the current estimate.

In an address before the American Petroleum Institute in Chicago in November, 1937, I reviewed previous and successive estimates of reserves, and proudly called attention to the fact that the American Petroleum Institute Committee on Reserves on January 1, 1937, estimated the proven oil reserves at thirteen billion barrels; and yet nearly four billion barrels have been produced in the intervening

period and the present estimate of future proven reserves of eighteen and one half billion barrels is twice the theoretical residue of the 1937 estimate.

This almost unbelievable achievement could only have been accomplished by the ever increasing improvement in petroleum technology and the associated sciences and the great advances made in the field of geophysics and in the art of exploration and discovery. In November, 1922, the deepest producing well in the world was in the Orange field of Texas, at 5490 feet, while today in Kern County, California, a well drilled to 15,004 feet, is now producing at 13,175 feet. The implications arising from this accomplishment are obvious.

Notwithstanding the progressive restraint upon current production in relation to available productive capacity, the number of oil wells in the past 15 years has increased from 318,600 wells, producing an average of 2420 barrels per well per annum at the end of 1926, to approximately 369,640 wells in 1938, producing an average of approximately 3371 barrels per well per annum.

The public is becoming increasingly tax conscious, but scarcely anyone can be found, outside of the industry, who realizes that gasoline taxes of one million dollars in 1919 have grown to $1,335,000,000 in 1939. It seems incredible that the average barrel of oil, for which the producer receives an average of $1.02, nevertheless yields in overall taxes $1.06 to the various tax gathering agencies.

What has this great industry done for the consuming public as these tax burdens have so enormously increased?

Again we have a fact comparison that seems unbelievable. The average total retail price less tax in 50 representative American cities (including at least one city in each state) was as follows:

29.74 cents per gallon in 1920;

13.31 cents per gallon in 1939.

This is a reduction of nearly 55 percent.

The average state tax has grown to 4.44 cents per gallon of gasoline, to which the added federal tax of 1 cent has produced a total average tax of 5.44 cents per gallon.

How have the employes of the oil industry fared in this period of enormous decline in the price of petroleum products, and enormous increase in the burdens of countless taxes?

Oil-field and refinery employes are among the highest-paid workers in all industry.

The U. S. Department of Labor Statistics show that:

a. The average hourly wage rate of the refinery worker is now 97.2 cents, as contrasted with:

b. The all-industry average of manufacturing industries of 66.2 cents;

c. The average refinery work week now is 36.4 hours, as contrasted with:

d. The average refinery work week of 49 hours in 1929;

e. The refinery worker's earnings now are 6 percent more than he received in 1929 for 26 percent less occupational hours;

f. The average hourly wage rate of the oil-field worker is now 88.5 cents, as contrasted with:

g. 66 cents average hourly wage in 1929;

h. The average oil-field work week now is 38 hours, as contrasted with:

i. A 51-hour average work week in 1929.

Employes in every branch of the industry have enjoyed, in comparable fashion, this marked trend toward higher wages and reduced work week.

One factor is generally known to the entire public—the constant improvement in the quality and quantity of petroleum products, and the extension of the services of the industry throughout the length and breadth of this nation. In no other industry is there a comparable extension of so many free and helpful services as in the marketing section of the oil industry.

Investment and Earnings

What has the petroleum industry been able to earn for its stockholders, notwithstanding the decline in the sale price of its products, the increase in its labor costs, the greater depth to which it has progressed in its oil-producing operations, the enormous increase in its tax burdens, the improvement in the quality of its products, and the wide-spread extension of its marketing, and other services?

The invested capital in the industry is $14,500,000,000, with an average of $14,500 per employe. A recent carefully prepared memorandum on this subject, by specialists engaged in making a study, records that "during the past 18 years, while the oil industry was earning a total of $4,200,357,974, it was paying a total tax bill of $11,808,484,000—almost three times as much. The four billion paid to the stockholders represented a return of about 2 percent a year on their average investment of eleven billion dollars, while the twelve billion dollars that went for taxes during the same period amounted to 6 percent of the same investment.

"These facts all show that the petroleum industry functions primarily not as a profit-making enterprise for the enrichment of its stockholders, but rather for the benefit of employes, stockholders, consumers and the public."

Although there have been increasing impediments to foreign trade in recent years adversely affecting American exports, and although foreign individual and corporate enterprise in the oil business has been consistently diminished by the creation of government monopoly, government expropriation and the nationalization of natural resources in foreign countries, there has been a decided increase in the participation by American companies in foreign oil operations with a consequent advantage not only to American investors, but also of great value to our nation, from both an economic, military and naval standpoint.

These accomplishments of the industry have resulted from self-regulation and state regulation in relation to matters of conservation with the cooperation of the federal government in its regulation of interstate and foreign transportation and the prohibition of the movement of illegally produced oil in interstate and foreign commerce. The federal government has been helpful in the studies made by the Bureau of Mines in its periodic estimation of the requirements of consumptive demand for petroleum and its products and in its consent to the formation of the interstate Oil Compact Commission. All attempts at federal control of oil production have been energetically opposed by the various associations in the oil industry, the oil regulatory commissions of the several states and the governors of the various oil-producing states. Each and all of them stoutly maintain that the attempted seizure of such regulatory power by the federal government would be vastly harmful.

It is my belief that a summary made three years ago, after a careful evaluation of the recognizable trends then existent in the oil industry, is now even more appropriate after a critical study of the stages in the oil industry's development which have succeeded that

[*Continued on page 34*]

Retrograde Condensation and Distillate Wells

By F. W. LAVERTY
Chief of Technical Service Department, Clark Bros. Company

RETROGRADE condensation has become the latest term of importance that the petroleum engineer has found necessary to add to his vocabulary, particularly in the last year. If the word receding is substituted for the more formable term retrograde, it somewhat simplifies the definition. What it really means is that under certain conditions of pressure and temperature condensation behaves in the reverse manner to what would normally be expected.

Normally, in compressing a mixture of hydrocarbon gases and cooling them to a constant temperature, the higher the pressure the more liquid will be condensed. This is true only to a critical point known as the retrograde point and, above it, quite the opposite occurs. In other words, instead of accumulating more liquid, less liquid is found in the trap.

Retrograde condensation can only occur when we have a mixture of gases. It occurs at pressures higher than the critical pressure of any of the individual components. It is well known that if you have a pure component that, when the pressure is increased at constant temperature, the entire mass will condense when the vapor pressure line is reached. Adding other components widens the boiling range so that it begins to condense at one pressure and complete condensing requires a much higher pressure or, if there is enough non-condensable gas at the temperature used, complete condensation may require very low temperature. In a somewhat similar manner, the greater the difference in critical temperatures of the components of the mixture, the greater the range in which the retrograde phenomena will occur.

Several of our best laboratories are and have been working on this problem but it is a very complex problem and one that will require a great deal of experimental work.

Presented before the Ninth Pennsylvania Mineral Industries Conference at State College, April 26 and 27.

Figure 1 is a hypothetical case that will be assumed for the purpose of illustration. This case assumes a reservoir with a mixture of light hydrocarbons and shows the relative amounts of fluid in the reservoir at various temperatures and pressures.

Following the 60-degree curve it is seen that, as the pressure is raised, normal condensation will take place in the manner that would be predicted from Raoult's law. It will be noted that the volume of liquid reaches a maximum at 1000 pounds per square inch. This point is called the retrograde point. Increasing the pressure results in decreasing or receding condensation and, in this range, the term retrograde condensation is generally applied. If the pressure is increased up to 2500 pounds per square inch, it will be observed that the liquid phase vanishes and that only vapor exists in the reservoir. It should, also, be noted that the retrograde pressure is practically the same for various curves of constant temperature and, that the higher the temperature, the more quickly the liquid phase disappears and that the complete vapor phase exists at lower pressures. This physical phenomena really adds another type of reservoir that

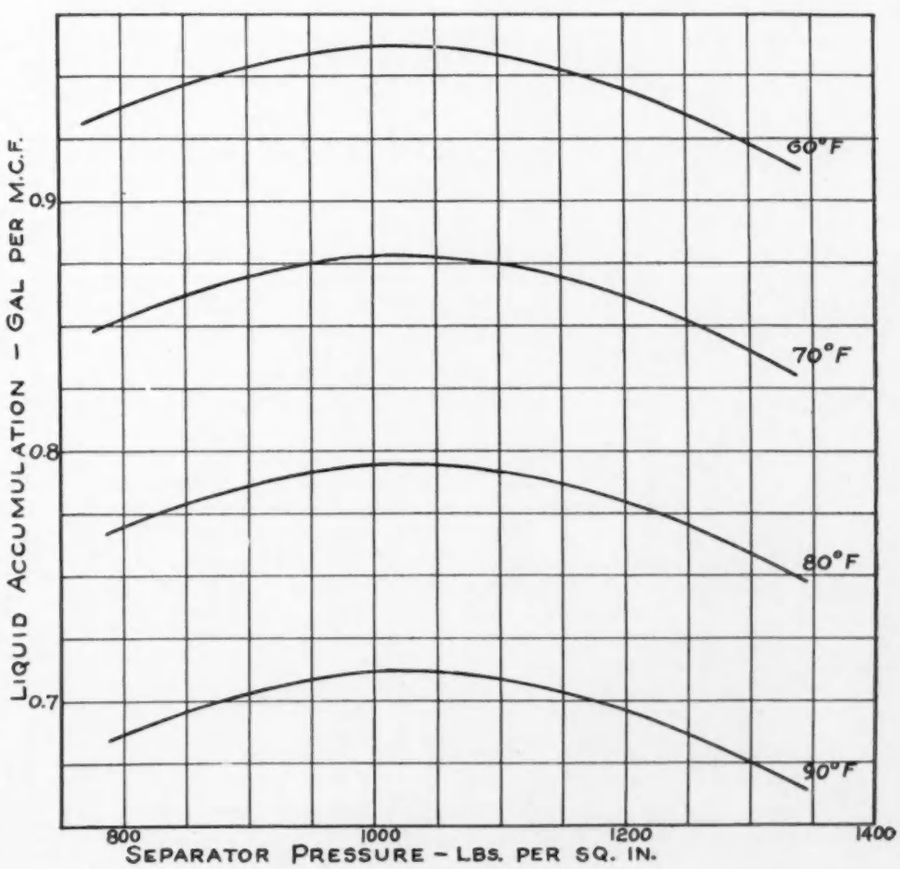


FIGURE 1
Effects of Temperature and Pressure Variations Upon Liquid Accumulations in the First Stage Separators.

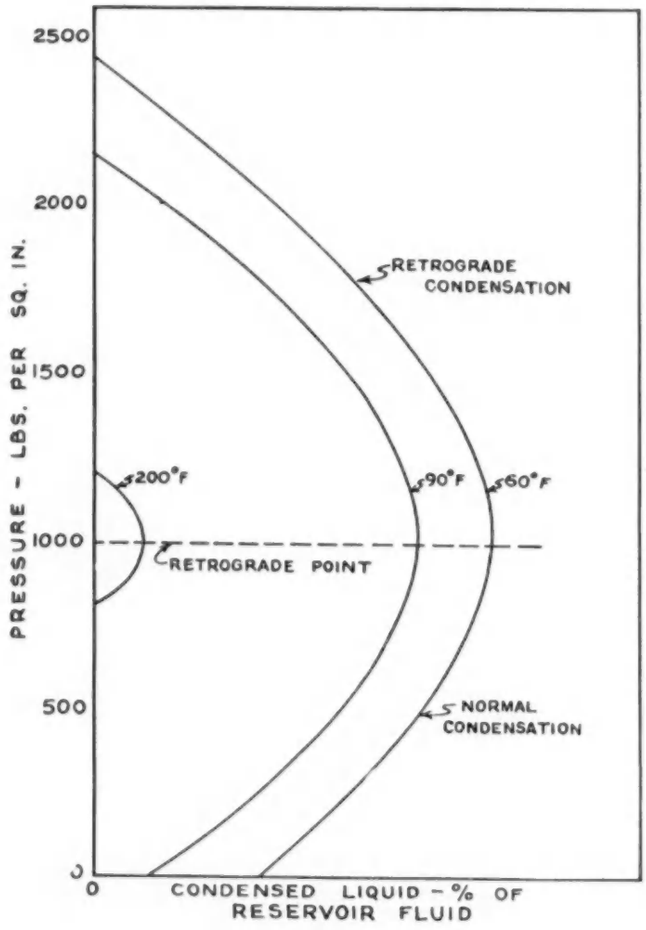


FIGURE 2

A Hypothetical Case of Retrograde (Receding) Condensation Characteristics of a Hydrocarbon System.

must necessarily be studied by the petroleum engineer. Fields of this type have existed for many years. A typical example would be the Turner Valley field in Canada which produced a high-gravity oil in the traps. The first well at Kettleman Hills in California, which drilled into the upper section of the very thick Temblor formation, produced a water-white distillate. The same is true of the deep wells at Big Lake, Texas.

Retrograde condensation has been known to physicists and research engineers for some time but oil men, in general, were not familiar with this phenomena or what it meant to them.

In recent years, particularly since drilling below 5000 feet became common, a number of fields that produced small quantities of distillate were discovered and more or less abandoned as gas fields with no market since there was, in most cases, no demand for the gas. Few producers realized that these fields could, if properly operated, by very profitable.

The phenomena of retrograde condensation which results in production from these so-called distillate wells is very important in studying what happens in these reservoirs. Consider a field in which the pressures and temperatures are high enough that all the fluid is in the vapor state. It is an immense advantage to have the crude in a vapor state because the percentage of recovery from this field, if properly operated, can be extremely high. It can be seen from Figure 1 that, in order to keep the crude in vapor state, all that is necessary is to maintain the pressure above the point at which condensation begins. If the pressure is allowed to drop and the liquid condensed, a large portion of it becomes irrecoverable because it will wet grains of sand and will not flow into the well bore.

It naturally follows that the way to maintain this pressure is to recompress the gas and return it to the sand. For the most economical recovery, the liquid should be extracted from the gas at the highest possible pressure so that the minimum amount of horsepower will be required to return the gas to the sand. Again referring to the curve, it will be seen that this pressure will be the retrograde point or approximately 1000 pounds. The operation of a distillate field essentially consists of reducing the pressure to the retrograde point and the lowest reasonable temperature, extracting the fluid and returning

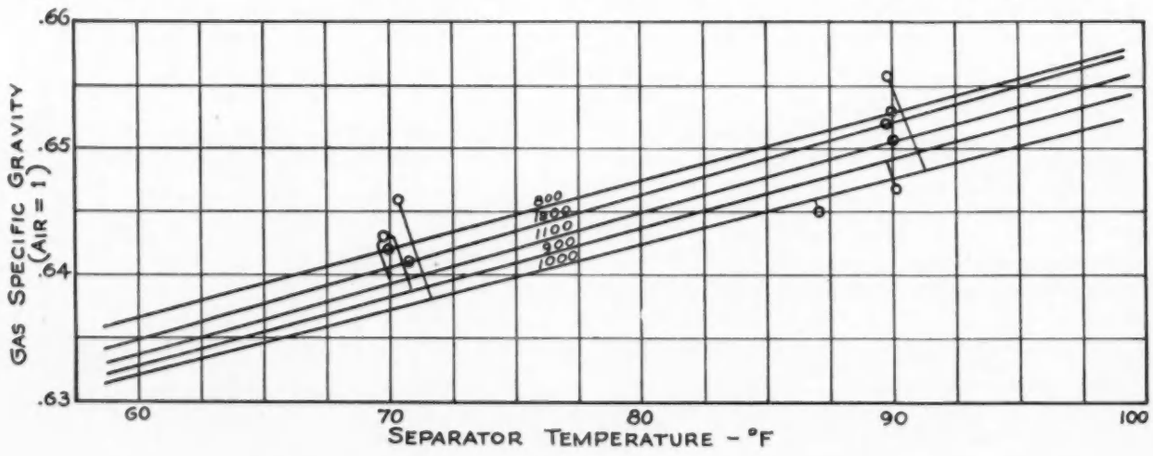


FIGURE 3

Effect of First Stage Separation Temperature and Pressure Variations Upon the Specific Gravity of Vent Gas.

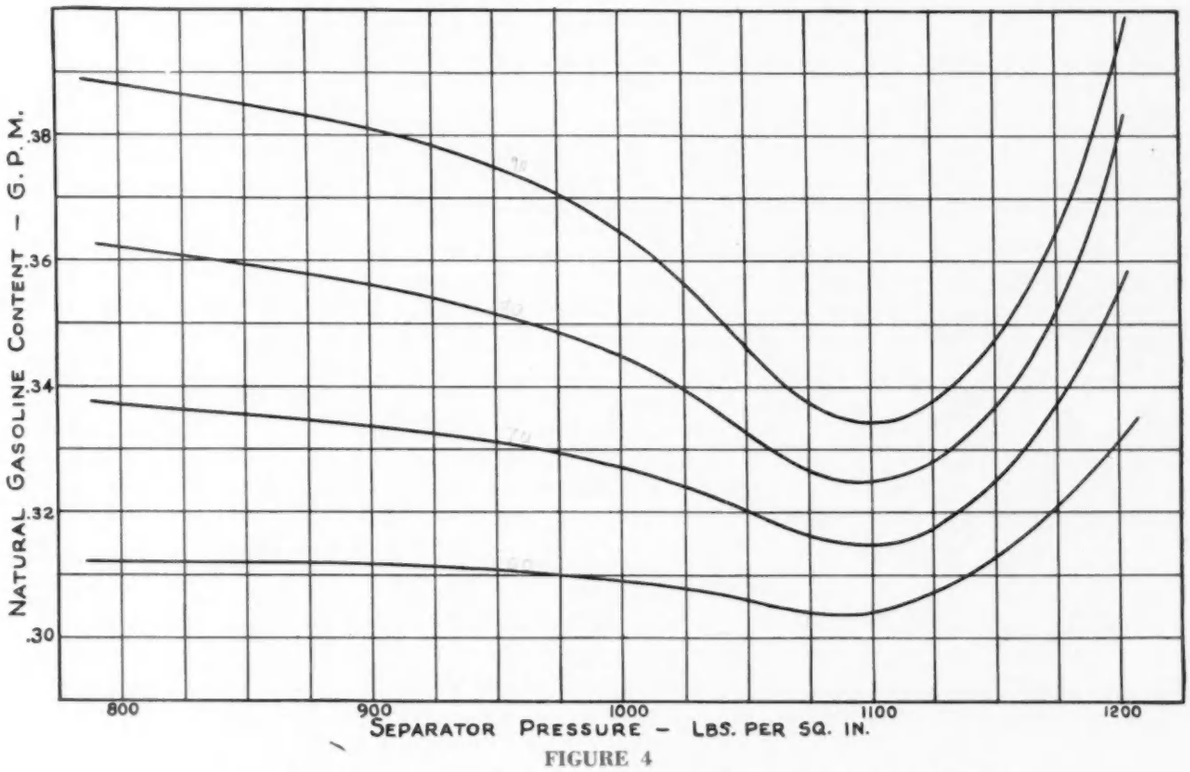


FIGURE 4

Effects of First Stage Separation Temperature and Pressure Variations Upon the Natural Gasoline Content of the Residue Gas.

the remaining gas to the formation.

The amount of distillate recovered per 1,000,000 cubic feet of gas processed is the criterion of whether or not the operation would be financially profitable. This determines the amount of production that will constitute the revenue from the field against which must be deducted the costs of drilling, recovery plant, and maintenance.

The first matter to be settled once the distillate field is drilled in is to determine the quantity of distillate that can be produced, to determine the fluid ratio, the optimum working pressures, and the pressure to which it will be necessary to recompress the gas to return the residue gas to the formation.

The curves which will be shown are the plotted test data showing the performance of a distillate well in East Texas. The bottom-hole pressure in this field was 2334 pounds per square inch. It was found that, to return 10,000,000 feet a day to the formation, a differential pressure of 150 pounds per square inch was required. However, due to the density of the column of gas over a mile high and the pressure exerted by the weight of this column, the compressor discharge pressure was 2225 pounds. Semi-portable equipment for test purposes, large enough for full-scale operation, was moved in on the lease and all the equipment necessary for measurement and separation was installed. Without going further into the discussion of how the test was run, terms of apparatus, etc., the results of this test will be shown and discussed.

Figure 2 summarizes the results of the tests, showing the accumulation of liquid in gallons per 1000 feet of gas processed at various temperatures and pressures. The effect of retrograde condensation is very apparent and it will be noted that all the curves peak at a pressure of approximately 1025 pounds and that, either side of this point, quantity of liquid recovered is smaller. It also very definitely shows that the lower the temperature the greater the quantity of liquid recovered.

Figure 3 shows this same data plotted with lines of constant pressure to show the effect of temperature. This also definitely shows the effect of retrograde condensation and the need for the lowest possible operating temperature for the maximum recovery of liquid. During these tests, the specific gravity of the gas was measured because the lower the specific gravity the drier the gas, in other words, the greater the quantity of the heavy hydrocarbons removed.

Figure 4 shows a plot of this data which definitely confirms the previous curves showing very definitely that the amount of heavier hydrocarbons removed has been the greatest at the retrograde point and at the lowest temperature.

Figure 5 is again the same data plotted with lines at constant pressure illustrating again the effect of retrograde condensation. The tests of the vent gas, such as shown in Figures 4 and 5, although they do not yield any design data do definitely confirm results of the tests on the accumulation of liquid.

In gasoline-plant practice, the usual method of determining the efficiency of extraction is to measure the gasoline content of the residue gas by the charcoal method.

Figure 6 is a plot of the gasoline content of the residue gas from the separators, showing definitely that at the retrograde point the maximum amount of fluid is removed from the gas. This curve also helps to determine the actual location of the retrograde point as it shows a much steeper curve than the other forms of plotting data. This shows that 1100 pounds would be a very good pressure at which to operate.

Figure 7 shows the amount of liquid accumulated in barrels per million cubic feet at the various pressures and temperatures. It il-

lustrates the trend of the greater toward recovery at low temperatures but does not, as would normally be expected, give very much information about the location of the retrograde point, consequently, the need for the other tests.

The measurements conducted with this test give sufficient information to allow the plotting of the gas solubility and Figure 8 shows the number of cubic feet per barrel at various pressures and temperatures. The effect of retrograde condensation is, again, apparent. The liquid produced by retrograde condensation not only includes the more desirable heavy hydrocarbons but contains in solution large quantities of propane, ethane, and methane which are undesirable and which must be stripped from the gas to make a salable product. Normally this would be accomplished by means of a stabilizer but, in some cases, the stabilizer is ineffective due to the large quantities of methane in the solution. It has been found that stage trapping is nearly as efficient and considerably cheaper. Combinations of stage trapping and stabilizers are also used. Having determined the quantity of fluid that may be recovered, the next step is to find out how much of this fluid will remain to be pumped into the pipe line after the undesirable parts have been removed.

Figure 9 is a plot of the percentage of recovery by a single-stage and three-stage trapping and the effect of the storage pressure on the recovery. It is obvious that single-stage flashing is undesirable as it is apparent that in removing the lighter hydrocarbons some of the more desirable components also are carried away. This curve also illustrates that lowering of the recovery temperature, while it increases greatly the gross recovery of distillate, does not necessarily recover the maximum amount of net distillate because of the lower temperature condensing greater proportions of the lighter components, chiefly propane and methane. This is a fact that must be very carefully looked into in determining the economics of the case.

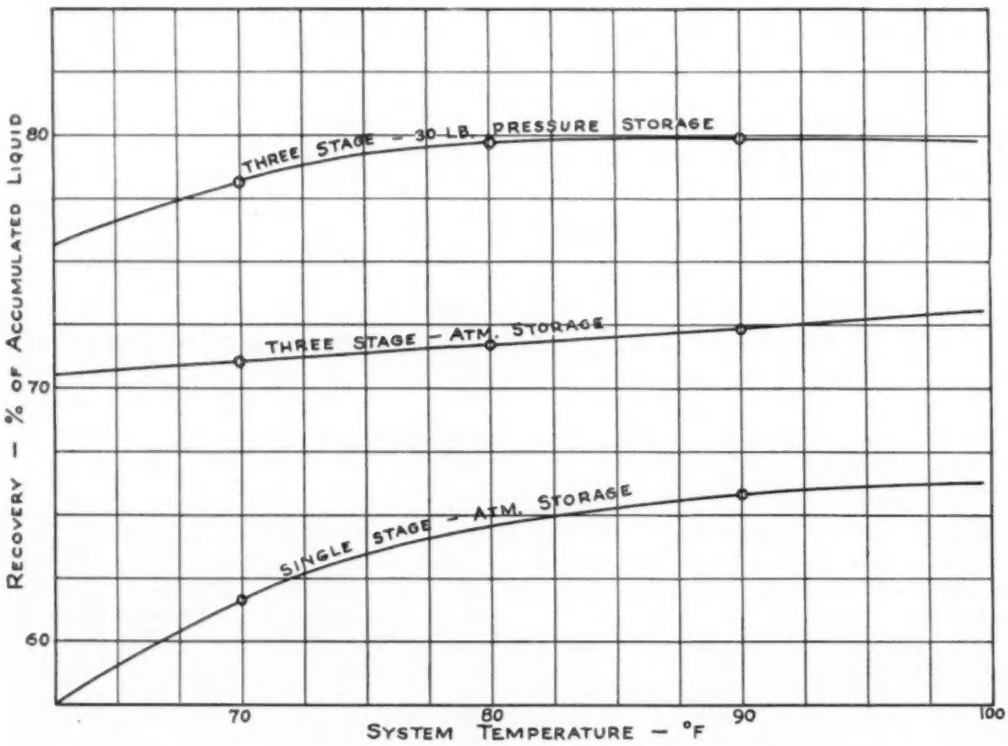


FIGURE 5

Comparison of Liquid Recovery Obtained by Single and Multi-Stage Systems. First Stage Pressure 1050 pounds per square inch.

Having conducted the tests, the next step is to design the recovery plant. The tests show specifically that a mean pressure of about 1050 pounds will give the optimum results. The next step is to determine the operating temperature. Because of the danger of freezing due to formation of hydrates which at 1050 pounds are liable to form at any temperature below 65 degrees, this would be a minimum temperature at which the plant could operate unless some method is used for removing the moisture from the gas. It is also the lowest temperature which would normally be expected without resorting to mechanical refrigeration. This question is again entirely one of economics and cannot be determined by ordinary field tests, but it is necessary to take samples of the gas and make fractional analysis and determine by calculation whether or not the increased recovery due to lower temperatures will pay for the additional equipment required. The general consensus of opinion at present is that mechanical refrigeration and drying are necessary parts of a complete recovery system. Another method for recovering higher percentages from the gas is the use of absorption which will probably be the most used method in the future due to its ability to give high recoveries at pressures above the retrograde point.

The majority of the plants installed have been without refrigeration primarily because of the simplicity and low investment. The most common method in use today where refrigeration is used is a process in which calcium chloride brine is used both as a refrigeration agent and an inhibitor of hydrate formation. In the experimental plants, this process has worked at temperatures as low as plus 10° F. Several articles have been published recently describing the results obtained.

The plant for the recovery of distillate is relatively simple although it involves the compression of gases at high pressures. The pressures being handled are no longer considered excessive and it is merely necessary to be careful in the design to make sure that sufficient strength is available in all the materials and that the proper safety precautions are taken.

Having discussed the proper procedure in the developing and operating of a distillate field, it might be well to consider what will hap-

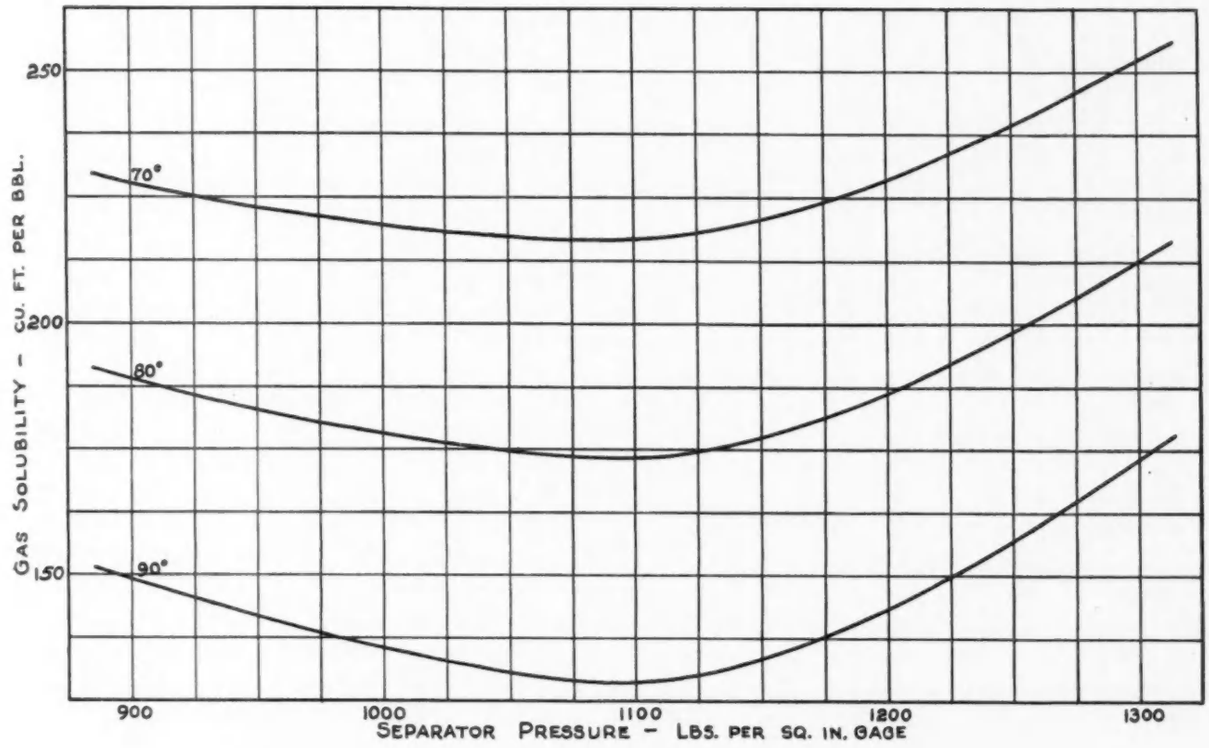


FIGURE 6
Effects of Temperature and Pressure on the Solubility of Gas in the Accumulated Liquid.

pen in an improperly developed field. A classical example of how to ruin a distillate field is illustrated in Patten and Ivey's discussion of this problem. They have plotted the data on a sand in the LaBlanca field in South Texas. In this sand the condensate content of the gas at 3800 pounds per square inch was 9 barrels per 1,000,000 feet. Due to blowing gas in the air, both accidentally and wastefully, the pressures declined to 2180 pounds at which pressure the condensate contained in the gas is only 2.6 barrels per 1,000,000 feet because retrograde condensation has reduced the content of the gas to this extent. It originally was estimated that at 4200 pounds, the initial field pressure, that the gas contained approximately 18 barrels per 1,000,000. Because of failure to maintain the original pressure in these fields, it is estimated that 82 percent of the original content will be lost due to retrograde condensation.

The operation of distillate fields is the highlight of discussion in the production industry today because:

First—Distillate type crude has a market premium.

Second—Being classified as gas wells, they are not subject to rigid proration.

Third—The possibility of long life and quick payout make it interesting from a financial standpoint.

Fourth—Unusually high recoveries can be expected.

Fifth—Even after depletion of the liquid content, an immense reservoir of marketable fuel is available.

Sixth—It is distinctly possible that with the increased efficiency in treating lighter hydrocarbons to recover high-grade gasoline, that the future development of distillate fields may become even more important than it is today.

Wells in Eastern United States

In the eastern part of the United States, the outstanding distillate field has been the Oriskany Sand area around Charleston, West Virginia. The gases from a number of wells in this area have been an-

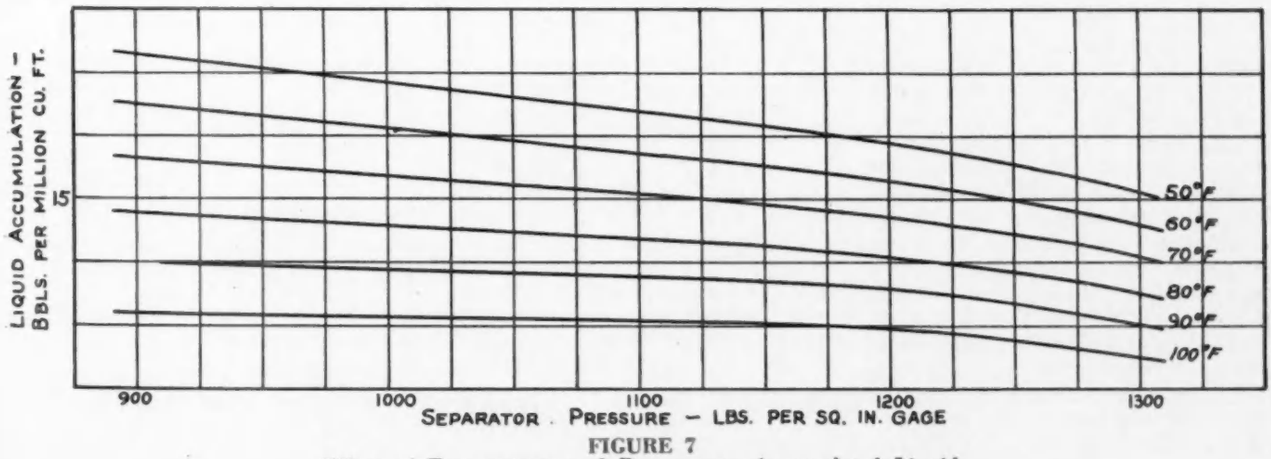


FIGURE 7
Effect of Temperature and Pressure on Accumulated Liquid.
(Flow Rate: 12 million cubic feet daily.)

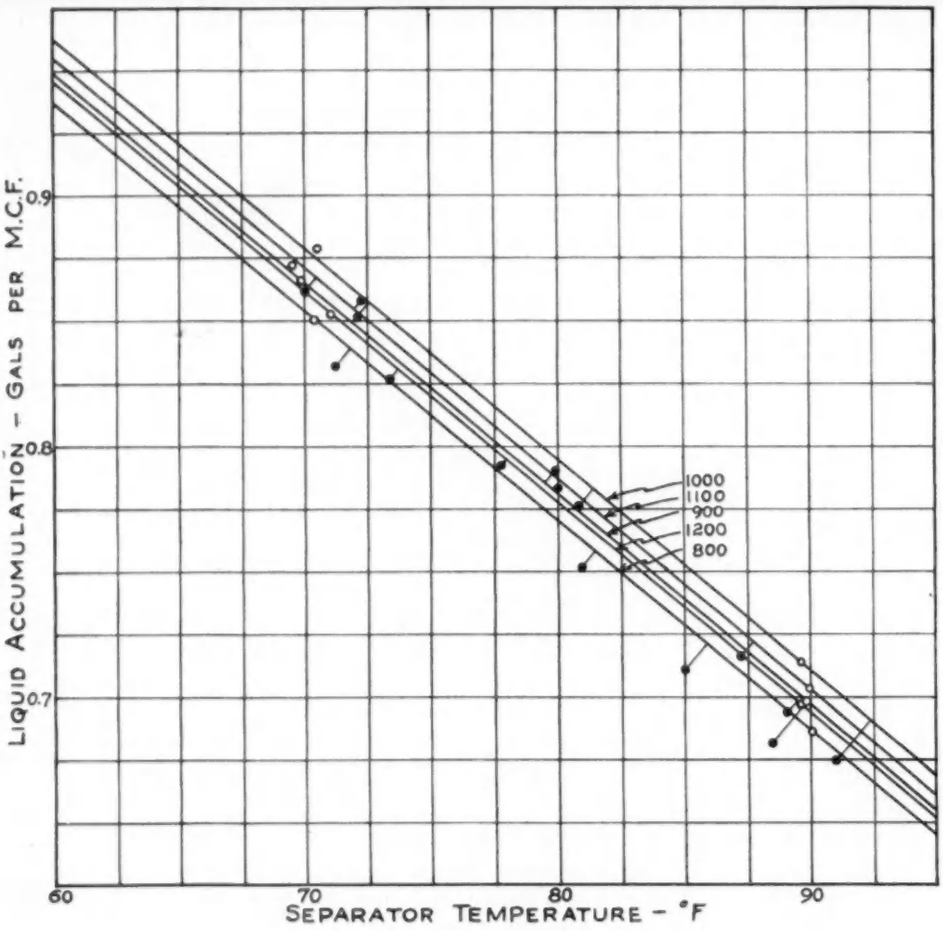


FIGURE 8

Effects of Temperature and Pressure Variations Upon Liquid Accumulation in the First-Stage Separator.

alyzed by the West Virginia Geological Survey and all these analyses show relatively large quantities of pentane, hexane, and heptane. Two analyses, the first taken on April 29, 1936, and the second on August 7, 1936, on the same well show a change in the proportion of the heavy components as time goes on:

	Well No. 423A	Well No. 423B
Methane	82.11	84.35
Ethane	7.53	6.61
Propane	2.54	2.04
Iso-Butane	.13	.17
Normal Butane	.92	.61
Iso-Pentane	.12	.13
Normal Pentane	.25	.21
Diisopropyl	.02	.00
Dimethylpropylmethane	.06	.08
Normal Hexane	.11	.10
Iso-Heptane	.03	.03
Normal Heptane	.04	.04
Octanes +	.04	.03
Nitrogen	1.40	1.60
Carbon Dioxide	4.70	4.00

Most of the wells in this area produced from 500 to 800 gallons of distillate per 1,000,000 cubic feet of gas and this distillate production has definitely fallen off as the field has become older and the pressures have dropped. After an average of about four years of operation, the distillate production on the average has been reduced to about 50 percent of the original.

In some of the older portions of the Oriskany sand fields of West Virginia, it is believed that retrograde condensation has made it necessary to introduce some new methods of producing these wells.

The Columbian Carbon Company has found it necessary to blow some of their wells in order to keep up the production. Wells are blown from periods of 30 to 45 minutes. When the differential pen on the meter shows a very low rate of flow, some of these readings are interesting. In the case of one particular well, it was blown once a day for about 45 minutes and during that time only 10 gallons of fluid was produced. The differential on the meter chart on seven consecutive days read as follows:

Before	After
2"	14"
3"	14"
2"	14"
1"	14"
1"	20"
0"	20"
1"	20"

It apparently takes about a day for the bottom of the well to load up with liquid to the extent that it is sealing off the gas. It is believed that this is liquid that condensed in the sand when pressure was taken off by flowing the wells. This fluid is now entering the well bores and sealing off the productive sand, as blowing the wells causes them to return to normal flow as seen above.

This fluid is being produced in the low-pressure wells in the Charleston area as a result of retrograde condensation occurring earlier in the life of the field and this points out a possible explanation as to why some of the gas fields which have been used for pressure storage have produced more gas than was injected into them.

It is possible that when gas is pumped back into a depleted sand that raising the pressure may vaporize some of the heavy hydrocarbons that have lain idle in the fluid state in the sand itself. By returning the pressure to somewhere near the original state, these hydrocarbons may again be vaporized and, when the gas is taken from the sand, a noticeable increase in volume has taken place. This has occurred in a number of repressuring and storage projects and it is distinctly possible that the phenomena of retrograde condensation may account for the increase in output.

Acknowledgment

The writer would like to acknowledge the kind assistance of Hugh Burdette of Godfrey L. Cabot, Inc., John Anderson of Columbian Carbon Company, and Paul H. Price of the West Virginia Geological Survey for the data on the Oriskany field in West Virginia.

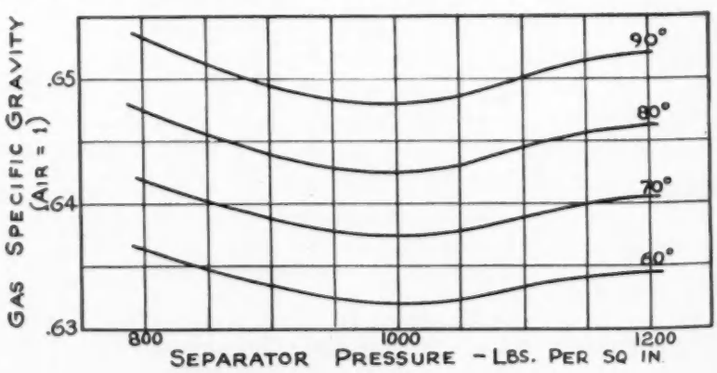


FIGURE 9

Effects of First Stage Separator Temperature and Pressure Variations upon Specific Gravity of Vent Gas.

Injection Method for Salt Water Disposal

By BRAD MILLS, Associate Editor

PART II

THE OIL WEEKLY presents herewith the second part of its three-part article comprising a symposium discussion of procedure and methods employed by East Texas injection systems for salt water disposal. Nine companies have completed 13 injection projects described in this series and other plants are under construction.

THE first installment of this article discussed conditions generally conducive to salt water injection, and specifically outlined the nature of disposal efforts in the East Texas field. Descriptions of disposal plants and wells operated by Tide Water Associated Oil Company and Magnolia Petroleum Company were also included in the first installment. The second installment describes several additional salt water disposal plants operating successfully in the East Texas field.

Sun's Projects

Sun Oil Company's Pace 38-B has been operating as an injection well for nearly two years. This project is located just outside the field and along the southwest flank, having originally been drilled to obtain oil production. About 1,000,000 barrels of Woodbine water have been returned to the base of the producing formation since June, 1938, an excellent record for a single well.

Injection was first tried with a simple "closed" system through standard tubing. Too much iron was picked up in that manner, and a special lined tubing string was run and packed off against the bottom of the casing. Tubing corrosion and trouble from plugging the formation with iron were eliminated.

Water is injected at a level well below the oil-water contact. A year ago sand showed signs of plugging up, and calcium carbonate was suspected as the cause. Heavy pump pressure was applied and an improvement in permeability was observed. The company considered treating the water for removal of calcium carbonate, although the plugging action had been very gradual and calcium carbonate might not have been the offending precipitate. It has been the practice to aerate the water, filter it to remove the iron, and inject it through lined tubing. As much as 3000 barrels daily was returned to the formation in this manner.

The water prior to injection passes from a gun barrel to a baffle tower, through a long wooden flume, to a wood receiving tank, through two wood settling tanks, a wood storage tank, a filter, and meter. The flow is by gravity from the gun barrel to the well, and injection is accomplished by the natural water head in the tubing.

A small wooden standby tank is used as a reservoir, and when the filter is cut out of the line for cleaning by backwashing the wood tank supplies filtered water for continued injection. A 90-barrel, elevated steel tank is used as a backwash and gravel as the chief filtering medium. The filter content varies from very fine sand on top to coarse gravel on bottom, being arranged in graduated layers. It has been very effective in the removal of iron from the water, although aeration, agitation and settling ahead of the filter remove up to 85 percent of the iron.

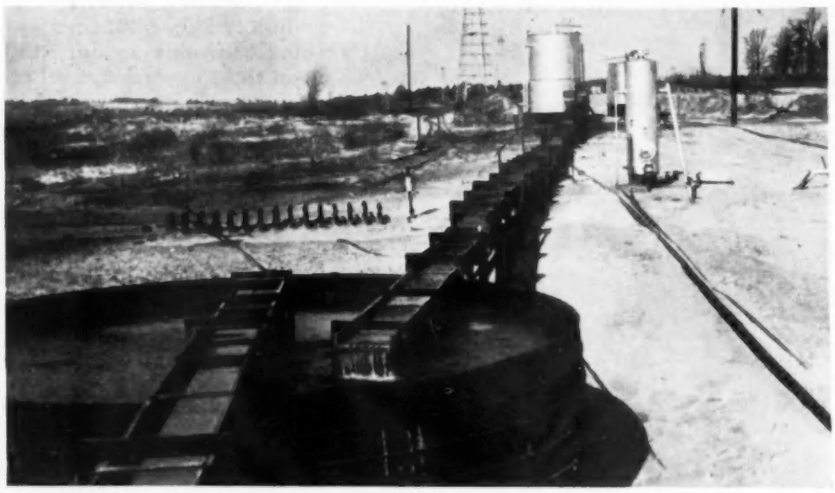
The injection system is not automatic, and water is metered into the injection well at about the rate of accumulation in the storage tanks on a nearby hill. The meter is placed in the line between the filter and the well.

Pace 38-B, the injection well was drilled originally to 3739 feet, but pumped water on an oil production test. Seven-inch pipe had been cemented at 3722 feet. The well was deepened to shale at 4007 feet with a 5-inch hole, and four sands were logged below the original completion depth. The hole was underreamed to 9-inch diameter from the casing to 3975 feet. A 5½-inch liner was cemented at 3808 feet, and at a level below several good shale beds that prevent upward migration of the injected water. Injection is through a 3½-inch cement-lined tubing. This string extends to the bottom of the liner and is packed off at the bottom of the

[*Continued on page 22*]

Sun Oil Company's Injection System

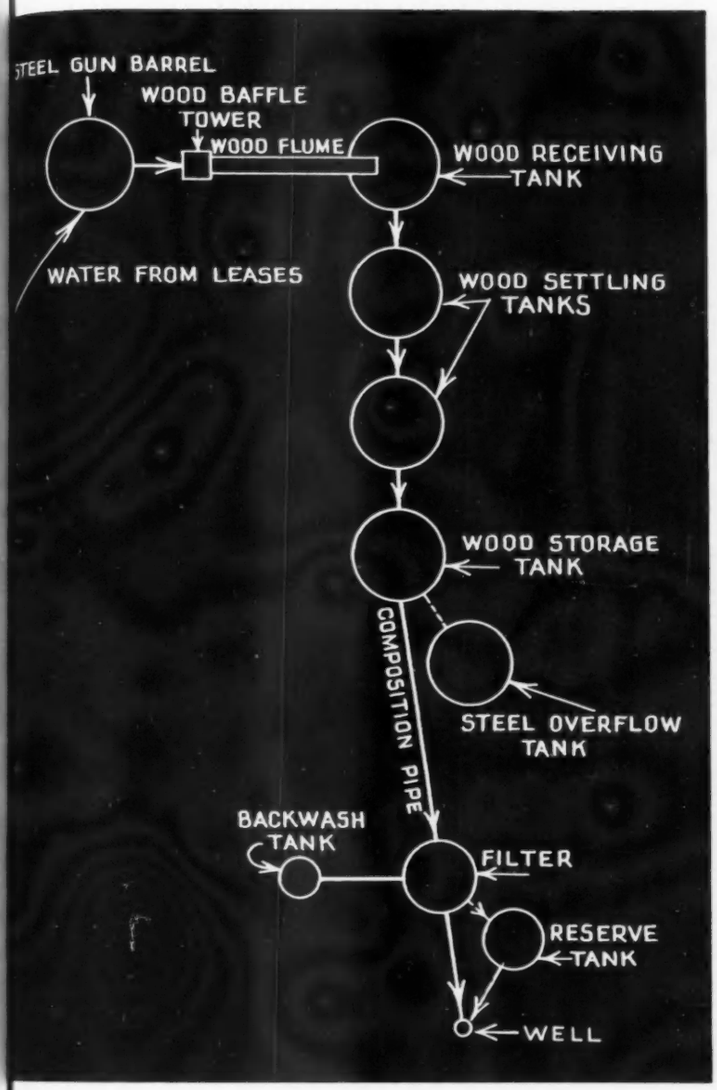
H. A. PACE LEASE



The steel overflow tank in the foreground (above) is under construction and will not be used regularly. The plant is on a hill above the filter and injection well, and flow throughout is by gravity.

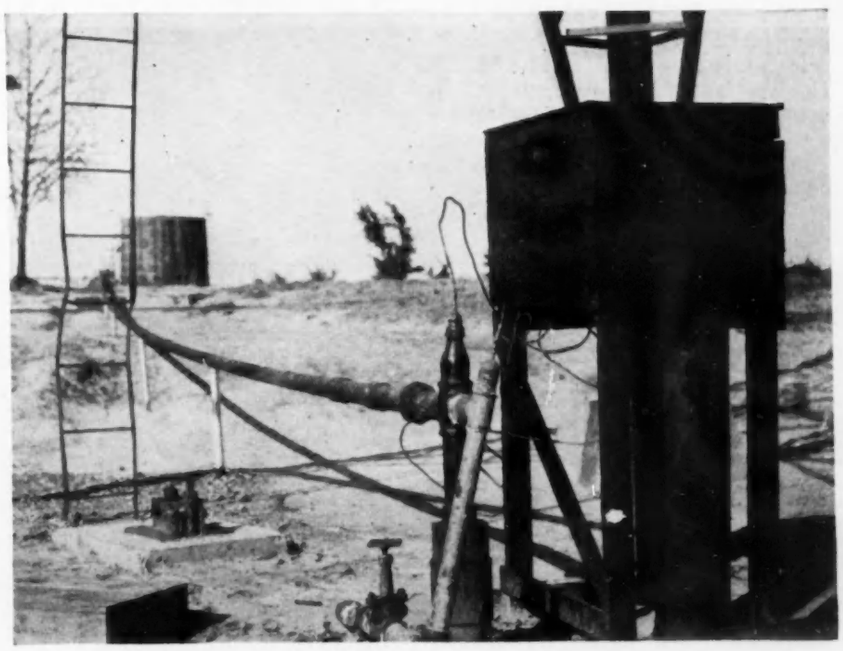
The first part of the original disposal plant on the H. A. Pace lease is shown at left. In the background are the gun barrel, a siphon and small wood baffle tower. The wood flume carries the water with a series of falls to the receiving tank in the foreground.

The receiving tank in the background, two settling tanks in the center, and storage tank in the foreground are shown in this photograph. Wood tanks are used because of high salvage value.



This plan drawing shows Sun Oil Company's method of handling salt water ahead of injection on its H. A. Pace lease. Though a simple layout, it has been an efficient installation since 1938.

After settling and aerating the water, it passes through the steel filter tank shown in lower center. The wood tank holds a reserve for continued injection while cleaning the filter. The elevated tank is a washdown tank for flushing the filter.



Sun Oil Company's H. A. Pace B-38, right, first salt water disposal well in the field. More than 1,000,000 barrels of salt water have been injected into basal woodbine sands through this well.

Sun Oil Company's Injection System

J. A. LAYNE LEASE

This general view of the J. A. Layne plant shows the asphalt-lined settling pit, with filter, wash-down tank and small pump in the background. The large white pipe shown between the filter and the far end of the pit is a 10-inch composition conductor for carrying backwash from the filter.

liner to permit limited contact of salt water with metal.

Sun Oil Company late in 1939 completed J. A. Layne 1, Sam Dexter Survey, Joiner area, Smith County, as a salt water injection well, this project being a converted oil well that produced for several years from the Woodbine sand. The hole was deepened to 3848 feet, a 5½-inch short string or liner run and cemented at 3716 feet, and a string of 3½-inch cement-lined tubing run to the bottom of the liner. The hole below the blank liner had previously been underreamed to 9 inches in diameter and the original 7-inch casing cemented at 3628 feet.

The disposal plant used in connection with J. A. Layne 1 varies somewhat from the company's first installation. Aeration of the water and settling out of objectionable solids are largely accomplished in an earthen pit, rather than in a series of wood tanks. The salt water comes to one end of the pit from the various wells, flows down a short flume and into an end compartment that is separated from the main pit compartment by a baffle. The water leaves from the opposite end of the pit, loses elevation to an extent that necessitates the use of a small centrifugal pump in sending it to the filter, then passes under natural head to the injection well. Use of the small pump is necessary because of lack of surface contrasts near the well.

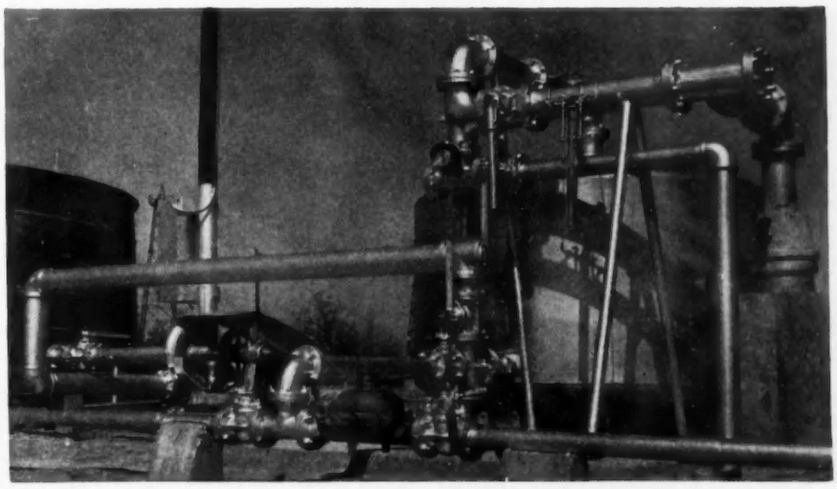
Sun Oil Company recently completed a salt water disposal plant on its J. A. Layne lease, Joiner area. Here the water is shown entering one end of an asphalt-lined earthen pit, via a short wood flume. The baffle is shown beyond the flume.

The earthen aerating pit is lined with a thin layer of asphalt that was sprayed on coarse cloth, such a coating being used to prevent seepage and to discourage bacterial action probably occasioned by contact of the salt water and earth. The wood backwash tank

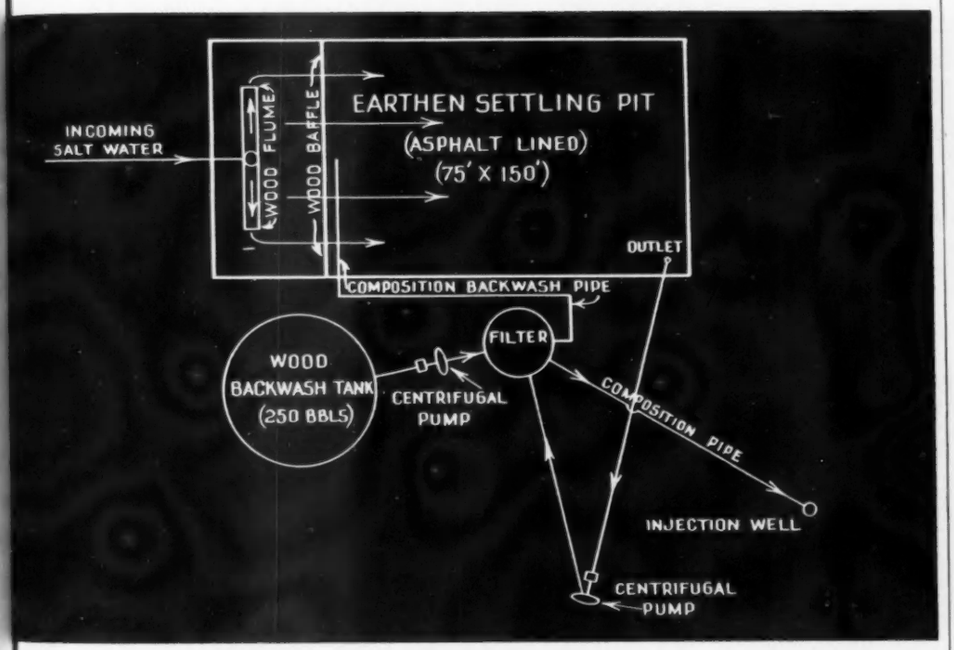
and the filter are on the same level, backwashing of the filter being accomplished by use of a small electric motor and centrifugal pump. The backwash water is returned to the settling pit through 10-inch composition pipe. All steel pipe used in handling the water on the surface is cement lined. Injection started in October, 1939, and the cumulative amount injected to February 1, 1940, was 110,477 barrels.

Ohio Oil Company's Procedure

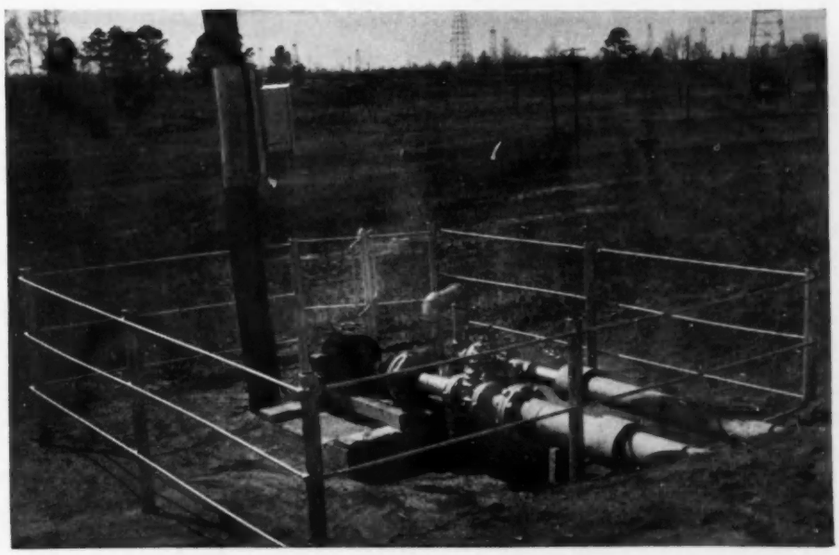
The Ohio Oil Company has been injecting salt water for several months into M. M. Cross 9, E. B. Faulks Survey, Joiner Area, Cherokee County, this project being a converted oil producer that originally was completed around 3680 feet with 7-inch casing cemented above the oil sand. For injection purposes the well was drilled to 3785 feet, a 5-inch liner or short string cemented at 3690 feet, and a string of 3½-inch cement-lined tubing run to the bottom of the liner. The cumulative amount of



This close-up shows full details of the filter, meter, centrifugal pump and wood washdown tank used by Sun Oil Company at its J. A. Layne disposal plant. The electrically driven pump picks up water from the tank, forces it through the filter and back to the pit, via a large composition pipe.



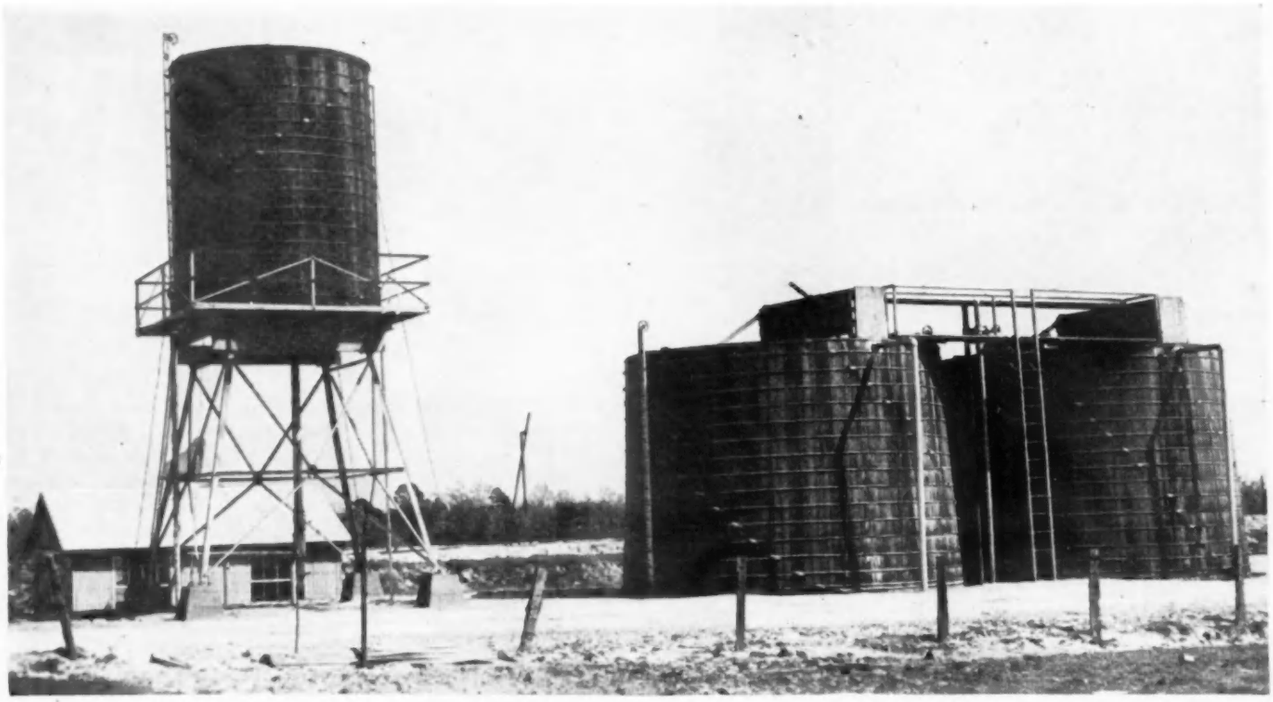
This plan drawing shows how Sun Oil Company has made good use of an asphalt-lined earthen pit at its J. A. Layne disposal plant, a compact layout using small pumps and large composition pipe.

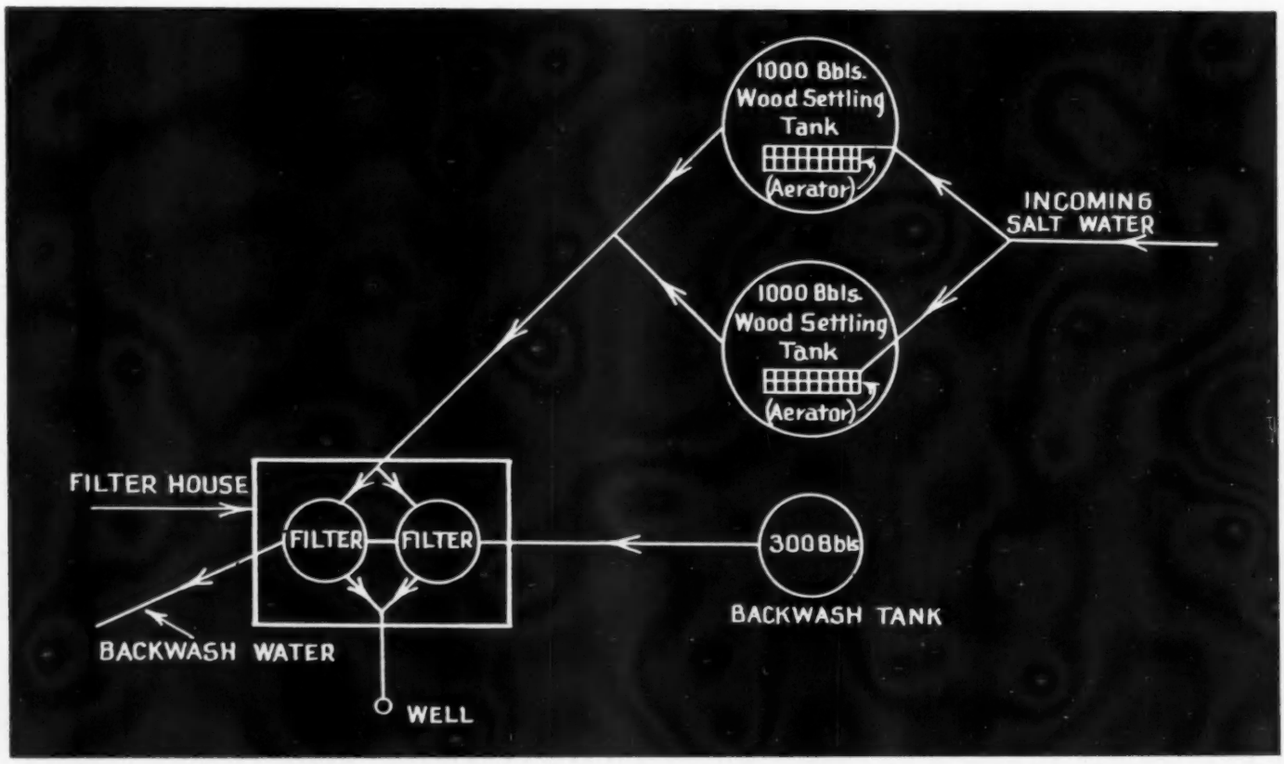


A small centrifugal pump is used to force the aerated water through the filter. Lack of surface contrasts necessitates boosting the aerated water to the filter. Flow from filter to well is by gravity.

Ohio Oil Company's Injection System

M. M. CROSS LEASE

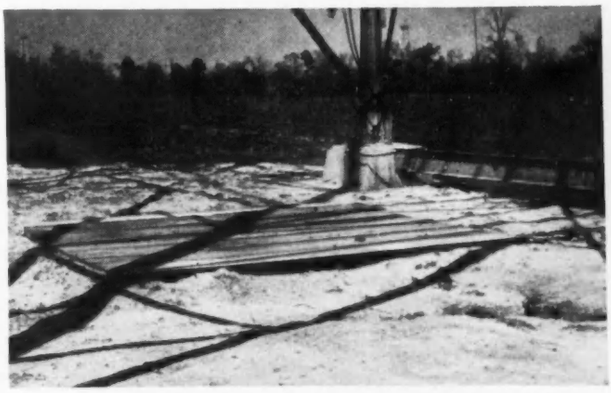




The Ohio Oil Company uses two 1000-barrel wood tanks for settling the salt water after aeration. Aerating units are at top of tanks. Elevated tank is a washdown tank for filters.

A plan drawing of Ohio Oil Company's first salt water disposal plant on the M. M. Cross lease. A second well is being completed, the first two-well arrangement in the field.

Outlets from settling tanks are four feet from bottom and same level is maintained. Two filters are located in the house. The pipes to filter house carry backwash water.



Ohio Oil Company's first injection well, M. M. Cross 9, is lower than the disposal plant, and well connections are placed in a cellar. Injection is by gravity from the plant.

salt water injected to February 1 was 286,700 barrels, injection having been largely by gravity. The well is now handling about 3500 barrels of salt water daily.

The first twin injection project in the field is being undertaken by The Ohio Oil Company, with the conversion of M. M. Cross 12 into an injection well. M. M. Cross 12 is a direct offset to M. M. Cross 9, and the same general surface facilities will be used in preparing the salt water for injection. M. M. Cross 12, until recently an oil well, carried a 7-inch oil string at 3624 feet. The well was deepened to 3828 feet, and a short string of 5½-inch casing cemented between 3540 and 3680 feet to protect formations immediately below the shoe of the 7-inch casing. A string of 3½-inch cement lined tubing was run on a packer to a point near the bottom of the 5½-inch short string.

The company's aerating and settling unit is one of the most compact in the field. The incoming salt water passes through aerating troughs at the top of two 1000-barrel wood settling tanks, through the tanks, through two filters, and into the well under natural head. The receiving tanks are equipped with wood conduits and baffles to obtain an increased settling effect. The tank outlets are six feet from the bottom, the flow being into a common line to the filters. A 300-barrel wood backwash tank is elevated to permit gravity flow when backwashing the filters.

The Ohio Oil Company recently completed John Sadler 1, M. D. L. S. Coy Survey, as a salt water disposal well. This late input test is located a half mile outside the field in the Carlisle area, and was drilled primarily as an injection project. The well was drilled to 3785 feet and 7-inch casing cemented at 3652 feet. A full string of 5½-inch cement lined casing was run to and packed off at the bottom of the 7-inch string. The hole below these casing strings is being used "barefooted."

The surface arrangement for handling the water for this project is similar to that used on the M. M. Cross lease, and previously described, except that 1500-barrel settling tanks are employed on the field leases and the aerated water is taken about one mile through lined pipe to the filters and injection well.

The company last year abandoned two salt water disposal projects, Millie M. Cross 56 and W. T. Grissom 77, following unsuccessful injection efforts.

The Ohio Oil Company's first salt water injection effort did not prove entirely successful. An attempt was made to inject salt water into sands below the oil zone, while producing oil from the well. This dual arrangement was carried on for a short time through the use of tubing packers, the oil having been produced through the tubing, and the salt water by-passed to the lower water sands. The salt water was injected from the surface through the annular space between the casing and the tubing, by-passed through the oil zone, and injected into lower water sands by an ingenious arrangement not made public by the company. A closed injection system was used, but the water sands apparently became clogged in a short time and only a small amount of water could be forced into the well. This unique injection plan was given up after a short period, and the well, J. H. Sharpe 21, Joiner area, restored to its status as an ordinary oil producer from the sand found around 3693 feet.

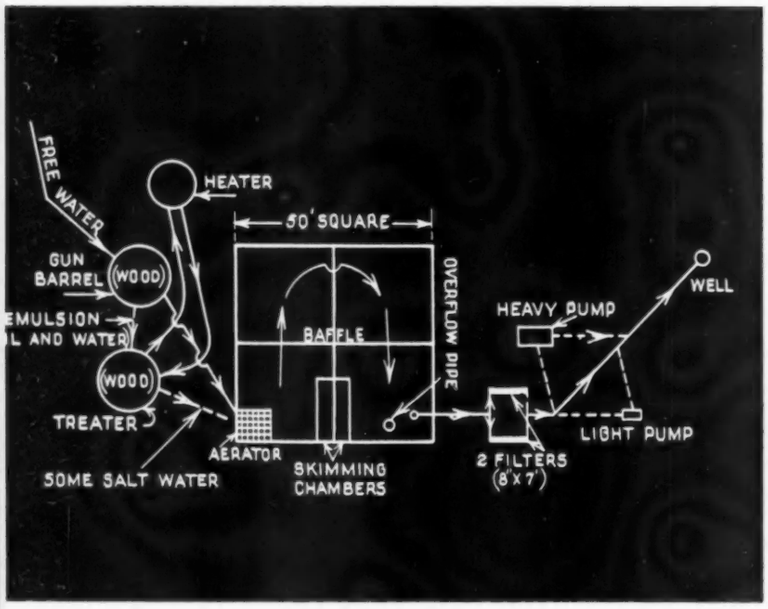
Stanolind System

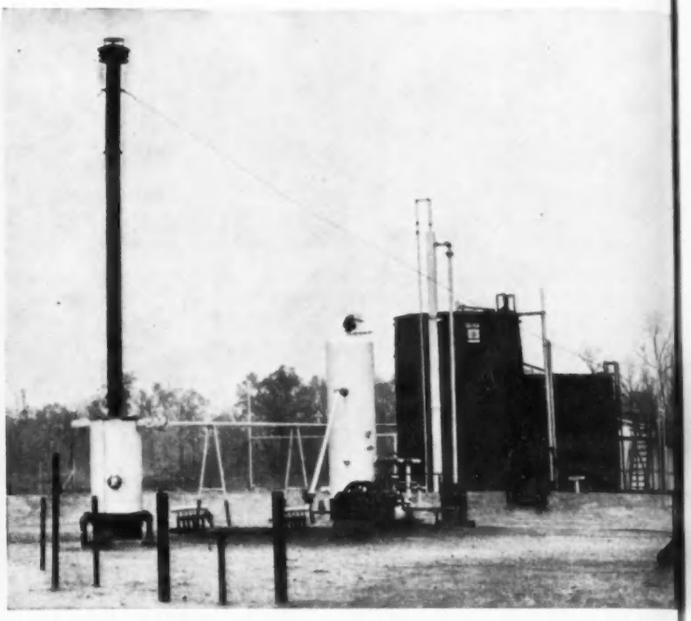
Stanolind Oil & Gas Company early in 1939, converted an old oil well, R. A. Moore 3, J. B. Cadena Survey, Joiner area, Cherokee County, into a salt water injection well by deepening the hole to 3727 feet. The 7-inch oil string had been cemented at 3626 feet. A 5-inch short string or liner was run and cemented between 3516 and 3678 feet. A string of 3-inch cement lined tubing was run with a sealed packer to a point two joints below the top of the 5-inch short string. Injection has been through the lined tubing and unlined 5-inch casing, but the exposed iron has given no apparent trouble.

Stanolind's salt water treating plant differs considerably from others in the field. The free water from various wells comes to a baffle type wood gun barrel tank, and most of the water handled goes direct to the settling pit from this tank. Some emulsion (oil and water), however, is skimmed off this main receiving tank and taken to a treating tank. After passing through a heater and returning to the treating tank, water recovered from the emulsion is sent to the settling pit. All salt water enters the concrete settling pit through an elevated wood aerating chamber, passes through the various compartments in the pit and leaves by gravity flow to the filters. The concrete settling pit is 50 feet square, and construction details

Stanolind Oil & Gas Company's Injection System

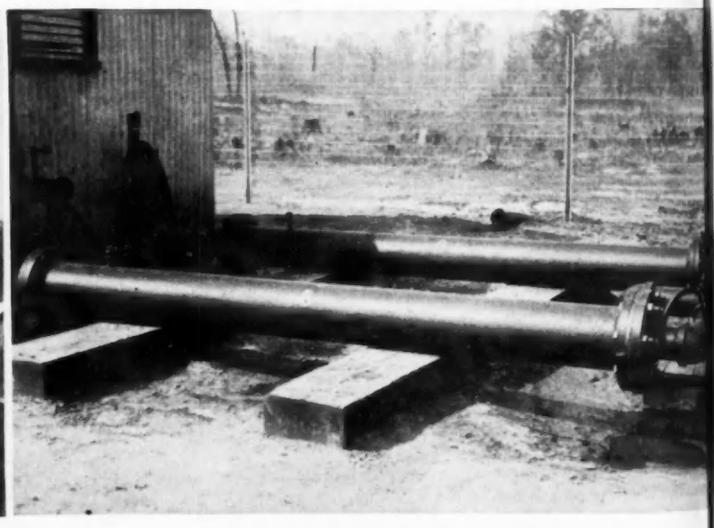
R. A. MOORE LEASE





Stanolind Oil & Gas Company operates an efficient salt water disposal plant on its R. A. Moore lease, Overton area, as shown. The concrete settling pit is to the left (not in gun barrel and emulsion tank in right background, picture), heater in extreme foreground, the main pumps and filters are near house in extreme left. Drawing gives flow details.

The concrete settling pit, 50 feet square, is shown, with small aerator in the foreground. The water finds its way around this pit and is released from corner near the house.



The filters used by Stanolind Oil & Gas Company are a departure from the usual type. They are made of two 8-inch by 7-foot pipe sections, lined with flannel to catch solids.

will be found in the accompanying drawing.

The two filters are radically different from those ordinarily used by other operators. Each filter is composed essentially of an 8-inch by 7-foot section of pipe and a flannel sack or lining. The aerated salt water is strained through the flannel sacks and sent to the injection well under natural head. A light pump and a heavy power pump are available for injection purposes, but they are normally cut out of the line.

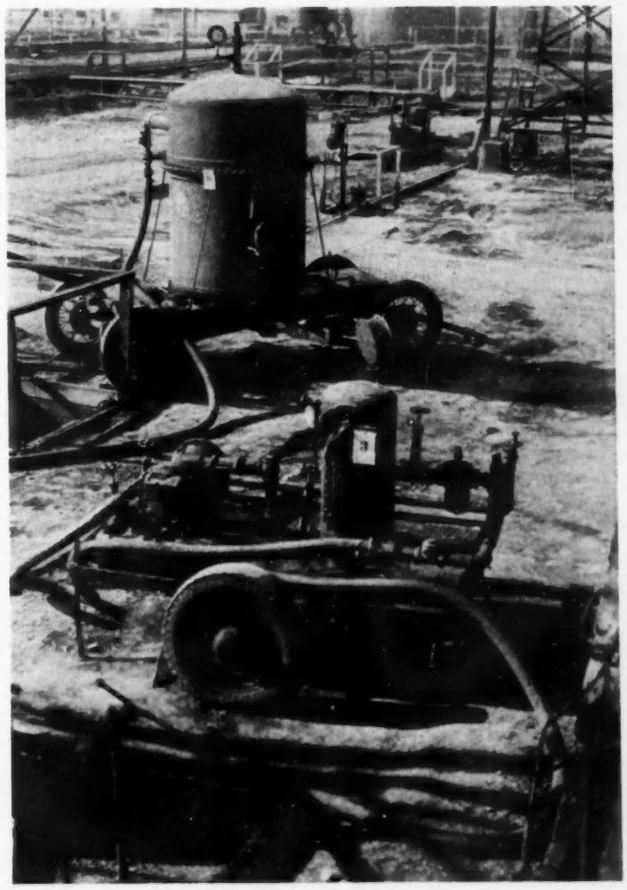
Portable Meter Units Aid In Special Well Gauging

A GREAT many oil producing companies in the past few years have realized suddenly just how important it is to know how much their individual wells are capable of producing. This condition has been brought about principally by the ever-increasing attention being focused on the problem of proration.

Withdrawal rates and their corresponding reservoir pressures today are considered essential in programming the economical productive life of a well or field, and are directly related to a well's potential, whether that potential is based on demonstrated rate or calculations.

Two principal factors are involved when the potential of a well is taken. The first, though not to be taken up in this article, consists of the actual recording or determination of the reservoir pressure in pounds per square inch for each given rate of production. The second factor, though not of lesser importance, is the accurate gauging of the fluid as it comes from the well.

Whenever special gauges are taken on a well, it usually causes a congestion or doubling up of the gauging facilities of the entire lease, as a separate set of gauge tanks has to be set aside for exclusive use of the well being tested.



Old automobile chassis mounted gauging units are being used by a large Pacific Coast operator for special well gauging.

Confronted with the problem of having to take special gauges on various wells in the field for potential-taking purposes, and where special tank gauging facilities could not be arranged conveniently, a large company in one of the fields on the Pacific Coast designed a portable gauging unit. On several old automobile chassis and trailers dump meters and meters of the positive displacement type were mounted.

As shown in the accompanying photograph, the rubber-tired, shortened, and heavily braced carriages, when fitted with a steering towbar, can be towed to any desired location and quickly spotted near the well. Heavy flexible hoses fitted with union ends are used to tie the equipment into the nearby gas and oil lines, including a small rubber hose connected to the dump meter which can supply gas to run the pumping unit engine, should the test be conducted before the regular lease fuel lines have been laid down. Partly visible in the photograph, at each corner of the trailer carrying the dump meter, are four vertically placed crank-type screw threaded rods by means of which the chassis can be leveled perfectly by screwing them down against wooden blocks placed on the ground.

Each piece of equipment has been calibrated accurately, and supplied with a number so that in the final calculations, the multiplying factors or meter constants can be looked up and applied quickly. Calibrated pressure gauges, and portable recording gas volume meters that can be fastened to any part of the derrick complete this handy arrangement.

Besides the convenience of using this equipment where tank facilities would be over-taxed, its use on outpost or wildcat wells would greatly simplify the close watch on the production rate during the initial test when the receiving tanks are usually some distance away.

DRILLING CONTRACTORS' NOTEBOOK

Helpful Suggestions For Those Interested In Drilling Methods

Operating Ideas Maintenance Hints New Rig Hook-ups

Published as a regular feature of THE OIL WEEKLY

1. RIGGING UP

Lugs Aid Moving Rathole Pipe

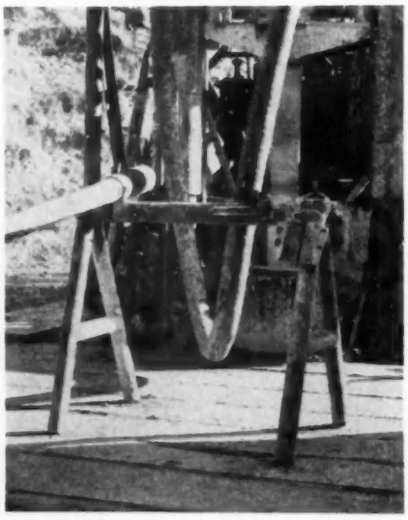
Lugs or ears welded to this rathole pipe permit its movement with elevators when rigging up or tearing down.

LUGS or ears welded near the top of the long tube of the rathole make it possible to lift the pipe with elevators, eliminating the need of special tools for this operation.

2. PIPE ASSEMBLY

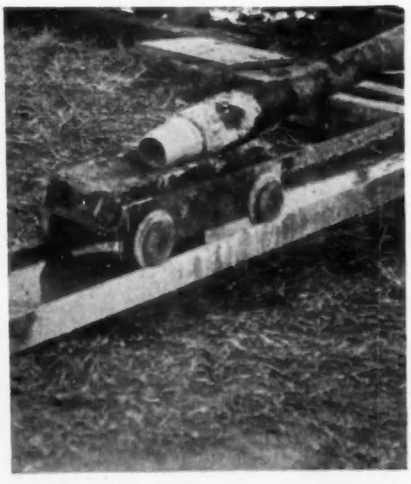
Handling Facilitated by Iron Horse

A STEEL support of welded 2-inch pipe, taking the shape of a carpenter's horse, facilitates handling of joints of drill pipe on the derrick floor. Pins are inserted on



Drill pipe is conveniently handled on the derrick floor with this support.

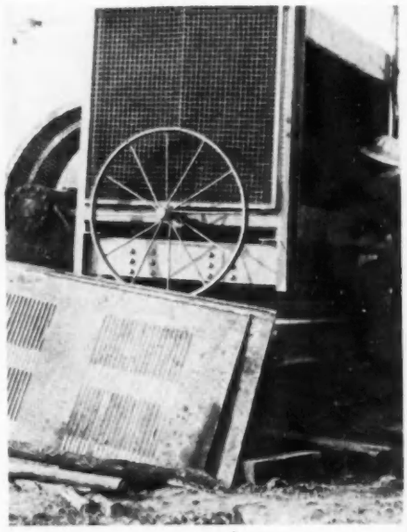
the cross member on one end to prevent the pipe from rolling, and on the other end to hang slips as well as to provide a stop for the pipe. The support lifts the box end of the tool joint high enough for easy cleaning. It is light enough to push across the derrick floor after elevators have been latched on the pipe.



This buggy—made of a piece of I-beam, a wood cushion and flanged wheels—is mounted on a run-way to move pipe.

3. ENGINE CARE

Wagon Wheel Makes Convenient Crank



A wagon wheel provides extra leverage when cranking this natural gas engine.

A SPOKED iron wheel telescoping the crank shaft provides a convenient means of cranking a natural gas engine used by Gillespie & Moore in the Bebee pool of Pontotoc County, Oklahoma. The wheel provides greater leverage than the customary hand-crank. With a cable attached to a spoke, one or two men can start the engine with one motion.

4. PIPE HANDLING

Buggy Supports End of Pipe

AN I-BEAM equipped with flanged wheels, used on a run-way of channel iron, provides a convenient means of moving drill pipe up the walk. A piece of hard wood, laid in the web of the I-beam, provides a cushion for the pin of the tool joint.

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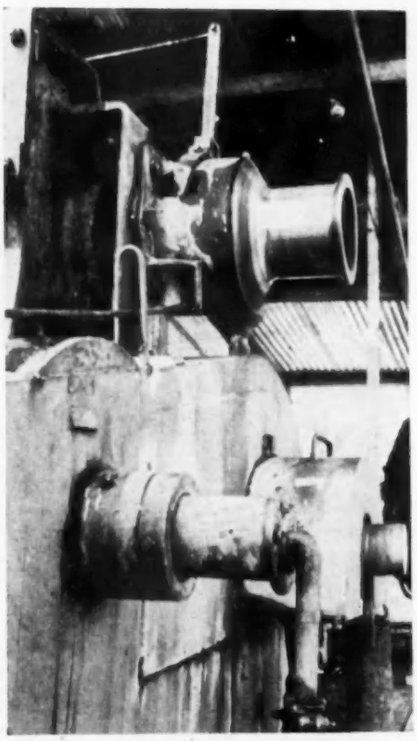
DRILLING CONTRACTORS' NOTEBOOK

5. DRILLING

Guard Controls Tong Line

WHIP in the wire line operating the tongs imposes excessive strain on both tongs and cathead, and if not suppressed, it may interfere with proper make-up of drill pipe joints. The guide roller built

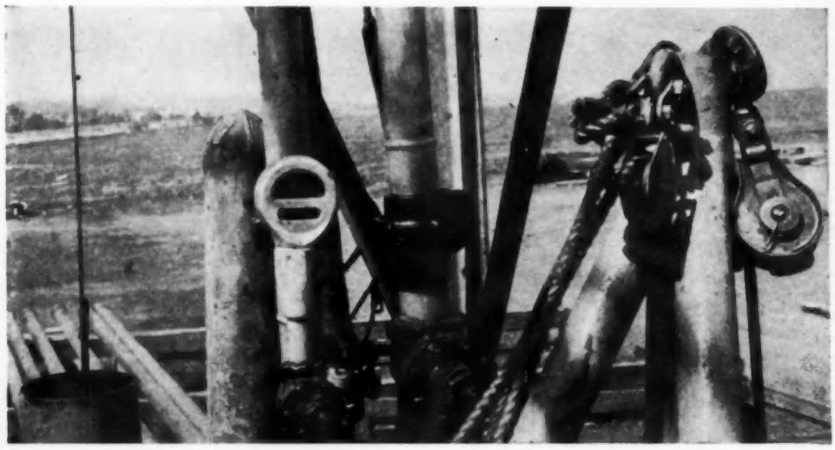


This loop, straddling the catline, snubs vibrations before they interfere with proper make-up of drill pipe joints.

into the head is too close to the drum to more than align the entering line with the point of winding, and if set farther away, would fail to perform this duty properly.

One drilling contractor welds a loop of 5/8-inch round iron to the drawworks housing before the cathead, threading the line through the loop before attaching to tongs. This elongated loop, with little more than line-width clearance on either side, suppresses side sway, while the top of the loop dampens the vertical motion of the line when the load is applied.

Wear on line and guard is widely distributed, and not of as serious a nature as the pounding sustained when allowed to thresh unrestrained. The loop also serves to restrain the line against sagging, where it might become entangled with other parts of the drawworks when released from the tongs.



This braced post on the derrick floor has several eyes for attaching snatch block.

6. SAFETY

Post Is Snatch Block Hitch

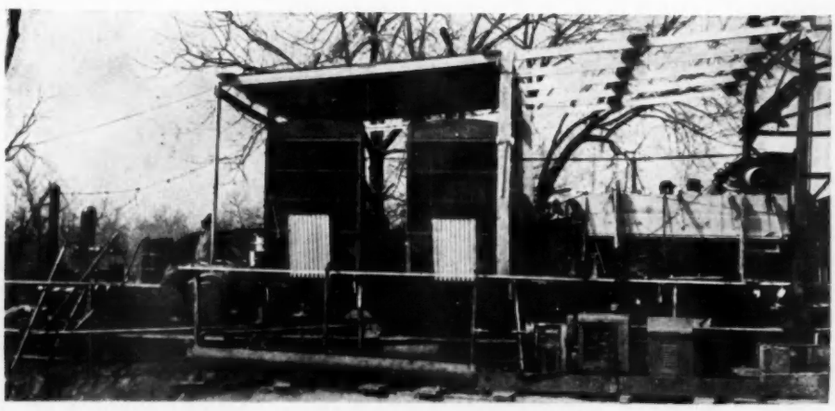
A 4-FOOT post with a base for bolting to the derrick floor is used by Olson Drilling Company to attach snatch blocks and other sheaves used for changing the pulling angle of spinning lines, cat lines and other cable used on the rig. The post is fitted with several eyes to which snatch blocks with hooks or sheaves having clips may conveniently be attached.

7. ENGINE CARE

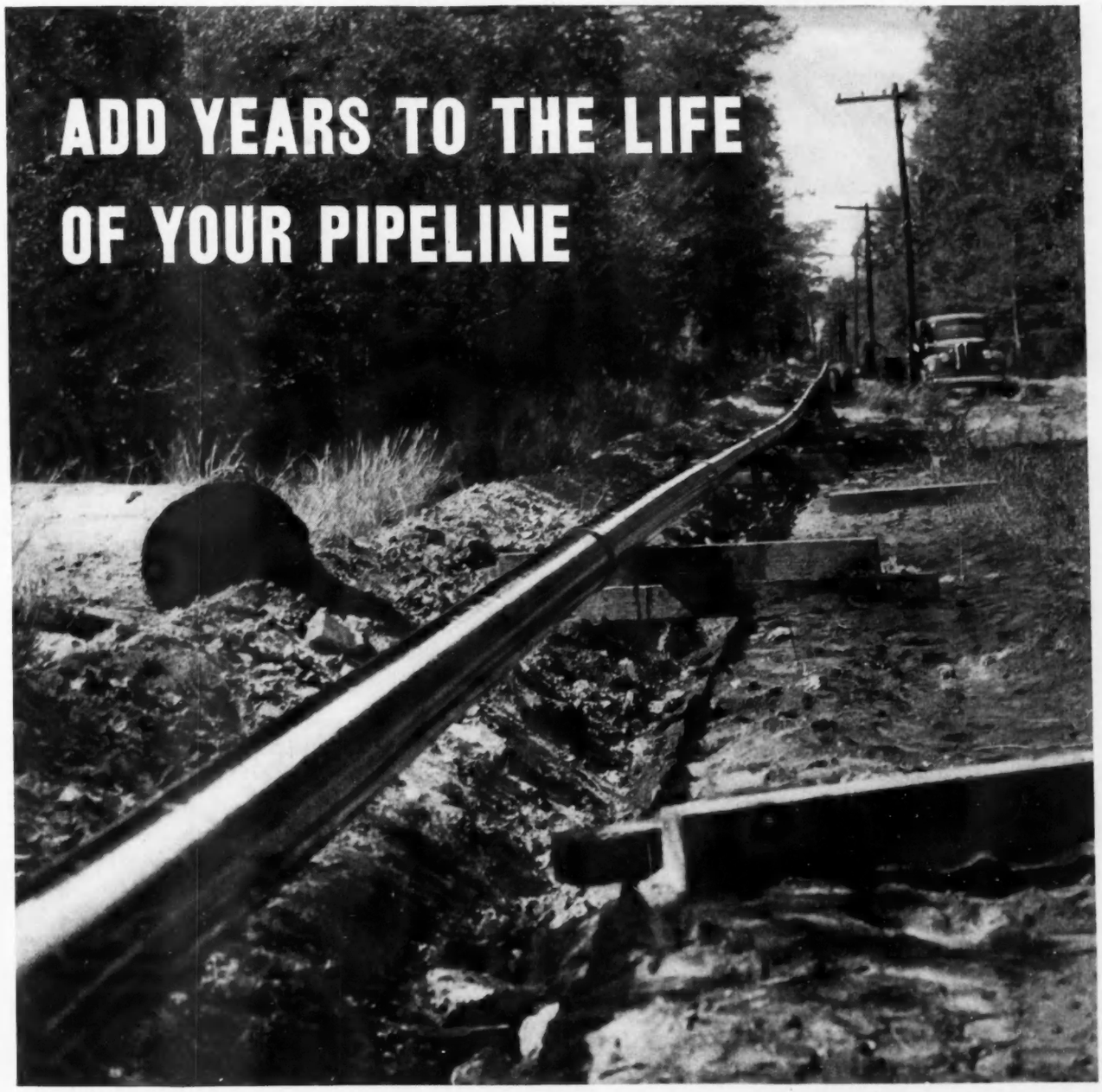
Radiator Guard Holds Heat

WARREN & BRADSHAW have devised a simple method to protect the cooling-water circulating system for engines during adverse weather. Two sheets of tin are wired to the radiator grill, extending to the ground. Feed water lines are thus maintained at a near-constant temperature.

Exhaust gases are carried through the engine-housing roof, away from the drilling crew. This rotary rig is drilling in the Asher pool of Pottawatomie County, Oklahoma.



Sheets of tin, wired to the radiator, keep cooling water at a constant temperature.



Barrett Application: Gulf Oil Corporation, Houston, Texas

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RUNS with little attention. Low upkeep expense because this simple, accessible 2-cycle gas engine is understood and looked after by the pumper.

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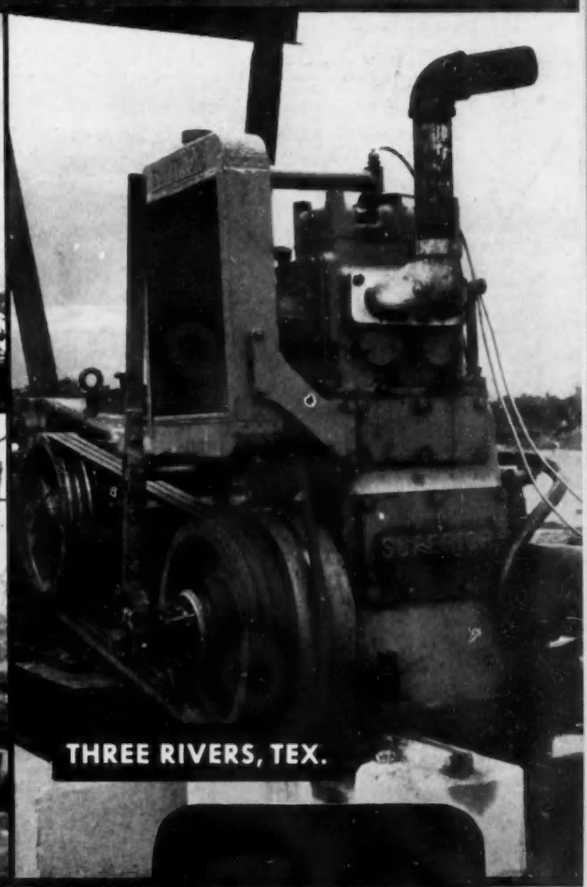

THREE RIVERS, TEX.

L SUPPLY COMPANY

DIVISION OFFICES
FT. WORTH, TEXAS
TULSA, OKLA.
TORRANCE, CALIF.

State Regulation of Oil

Continued from page 12

study and that these conclusions are reasonably justified:

First: Private capital, individual initiative, and free competitive enterprise have achieved the highest degree of development in exploration, exploitation, and in the advancement of each of the associated sciences involved in petroleum technological progress, which have resulted in cheaper prices to the consuming public in the United States.

Second: Helpful functions of government (the state and federal governments acting within their respective constitutional spheres), in regulation and in aid of petroleum industrial progress are recognized in the promotion of conservation, in the prevention of physical and economic waste, and in the scientific ascertainment of consumptive demand.

Third: In the foreign field, associated private enterprise has extended the field of American industrial power and prestige, with substantial benefits to the American government, and without the involvement of the United States government, as such.

Fourth: Government control, whether effectuated through government monopoly, governmental expropriation, or through the nationalization of petroleum and other natural resources has hampered, obstructed, and restricted petroleum industrial development as compared with or measured by the achievement of private capital, private initiative, and private management.

Fifth: Foreign exploration, production, and refining of petroleum have been dependent, to the greatest extent, upon the advances made by the petroleum industry in America in production and refining technology, and in the improvements made in the art of oil finding and in American manufactured equipment and supplies. No major development has resulted from purely governmental activity in any part of the world, and no government-controlled branch of the industry in any foreign country has been able to keep abreast of the progress made in the industry by private capital and enterprise.

Sixth: National defense and national welfare are best promoted and served by the extensive and efficient development of petroleum (an essential and indispensable weapon of national defense) through the media of private capital, initiative, and management in a free competitive system, susceptible of quick mobilization for emergent national service.

Plan for Authoritarian Control and Economic Dictatorship

The proposed Federal Oil Control legislation (Cole Bill) is confessedly designed to substitute federal government control and regulation of the production of oil for the existing and lawful state regulation. The Cole Bill was drafted in the Department of the Interior. It seeks to lodge dictatorial powers in a functionary of that department, subservient to the secretary.

This functionary would possess both legislative, executive and judicial powers with no practical opportunity for judicial review of adminstrative excesses.

A series of fictitious and inflammatory radio broadcasts were employed by the Interior Department in flagrant propaganda, at government expense, to create public interest in and demand for such legislation.

The proposed oil-control legislation, as a matter of governmental policy, cannot be disassociated from the planning of the new type of self-styled liberals who depreciate personal liberty and individual freedom and defy national government, and who seek to substitute a system of regimented industry and managed economy for the American system of individual initiative and free competitive enterprise.

The National Resources Committee, in formulating its report on Energy Resources and National Policy, assumes the powers and prerogatives of totalitarian government and economic dictatorship with an apparent innocence and subtlety that is as disarming as it is inimical to our free institutions and our constitutional democracy. In relation to all energy resources (including oil) it assumes federal power and consequent duty

(1) To fix, determine and enforce "prudent utilization";
(2) To prescribe, regulate and enforce "wise conservation";
(3) To guide and direct exploitation for "more effective economic and social objectives";
(4) To plan for "the orderly scheduling of the development of fuel and water-power resources in each region for the greatest economic and social benefit."

The Energy Resources Committee report to the National Resources Committee also divulges the collectivistic and authoritarian "national policy" sought to be adopted and also the recommended program for oil and other energy resources being activated in the government.

It assumes, with utter disregard of our constitutional system, that whatever is beneficial for the general welfare is within the power of the central government to effectuate. It contemptuously disparages legal and constitutional limitations.

It assumes that any imperfections in state law or state administration are guaranteed correction by mere federal usurpation.

Indeed, it raises the threatening prediction that if these problems of energy resources "cannot be solved by the regulatory approach, then we may anticipate with some confidence that there will emerge an insistent and eventually irresistible demand for public ownership and control."

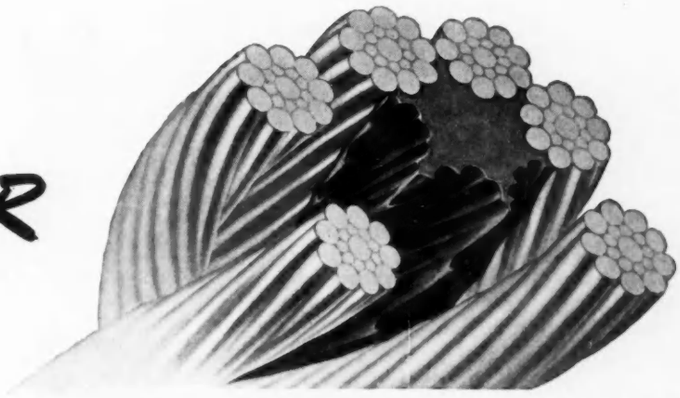
This dire eventuality is almost couched in the language of happy anticipation.

It exposes the heel of Achilles with a vengeance in the admission that the energy resources problems "encompass also the prudent utilization of the recovered petroleum and natural gas so that more urgent uses be given priority and so that a considerable portion of the heavier and less valuable oils be obtained from abroad."

In dealing with oil-control legislation, the plain statement is made, without evident embarrassment, that "the suggested legislation is based on the conviction that private rights in the control and production of petroleum must be so modified that the nation can defend itself against the physical waste and uneconomic uses of these irreplaceable resources."

When our national government arrogates to itself the determination and enforcement of "the prudent utilization" of oil, the prescription of the relative priority of

DISCOVER THE IMPROVEMENT WITH UNI-ZACT CORE



The Uni-Zact core gives better support to the steel strands; rotary line with this core stands up better under medium-heavy drilling loads.

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HERE'S an experiment you'll find both practical and profitable to make. If you haven't already done so, try a Bethlehem Purple-Strand Uni-Zact core rotary line. You'll be surprised at the improvement in the performance and life of the rope.

The Uni-Zact Core is manufactured by twisting together long lengths of a machine-made, parchment-like material. Its principal advantage over grown vegetable fibers, such as hemp, is its greater uniformity. This results in a center that can be made to closer tolerances both as to diameter and density.

Since wire-rope life is influenced by the support which the strands receive from the center, it is only natural that Uni-Zact-core rope will give more uniform life. Uni-Zact lines stand up better under medium-heavy drilling loads than hemp-center lines, even to the point of satisfactory performance in some places where hemp-center rope cannot be used.

Purple-Strand Uni-Zact core rotary line can be used anywhere that hemp-center line is now used. It has the same strength and sells for the same price. It is particularly recommended for drilling operations where the upper limit of endurance of hemp-centered ropes is required. It can also be used for coring, bailing and sand lines.

Bethlehem Uni-Zact core lines can be secured through any of the oil-field supply houses that handle Bethlehem wire rope. These ropes combine the high quality and unusual uniformity of Bethlehem wire rope with the extra uniformity of this unique rope core.

BETHLEHEM Wire Rope

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY

such uses, the modification of private rights, the forbiddance of "uneconomic uses" and the definition of what shall constitute "heavier and less valuable oil" and which of the same shall be obtained from abroad and by whom and from what places, and in what quantities, freedom shall no longer reign in the land!

Whether the principle that state regulation of oil production be upheld and vindicated in our governmental policy and system transcends overwhelmingly the fate of the oil industry and all who are engaged therein. There is involved in this issue the question of whether the American people shall suffer a successful assault on our American fundamentals, not by the frontal attack of proposed constitutional amendment, honestly proposed and deliberately decided by constitutional procedure, but by

first: the impairment of state sovereignty in relation to the constitutionally reserved powers of the states through the gradual usurpation thereof by the Federal government;

second: the emasculation of the separate functions of government in the legislative, judicial, and executive departments by the creation of myriad federal agents concentrating these three separate functions in each agency;

third: the practical scrapping of the right of judicial examination and review of administrative rulings and abuses in relation to countless administrative decisions through increasing disrespect for individual rights;

fourth: the accomplishment of these changes by extra-constitutional methods;

fifth: the establishment of a new species of tyranny bearing the beneficient label of government planning under the pretensions of which individual initiative and enterprise and our free competitive system are being regimented and stifled under government controls;

sixth: sacrificing individual liberties under the claimed necessities of the general welfare which it is claimed can only be safeguarded by a central exercise of power—the universal formula for dictatorship.

This is still a nation of liberty-loving, God-fearing, self-reliant and self-respecting people. The opportunity that this nation has afforded for the free exercise of courageous, persevering, industrious and resourceful individual effort has established its political, social and industrial greatness. No new prophet can defy this, or any other, nation without making the citizen ignoble. To build America—first preserve its free American institutions!

Paint Coatings Reduce Air Deterioration of Casing

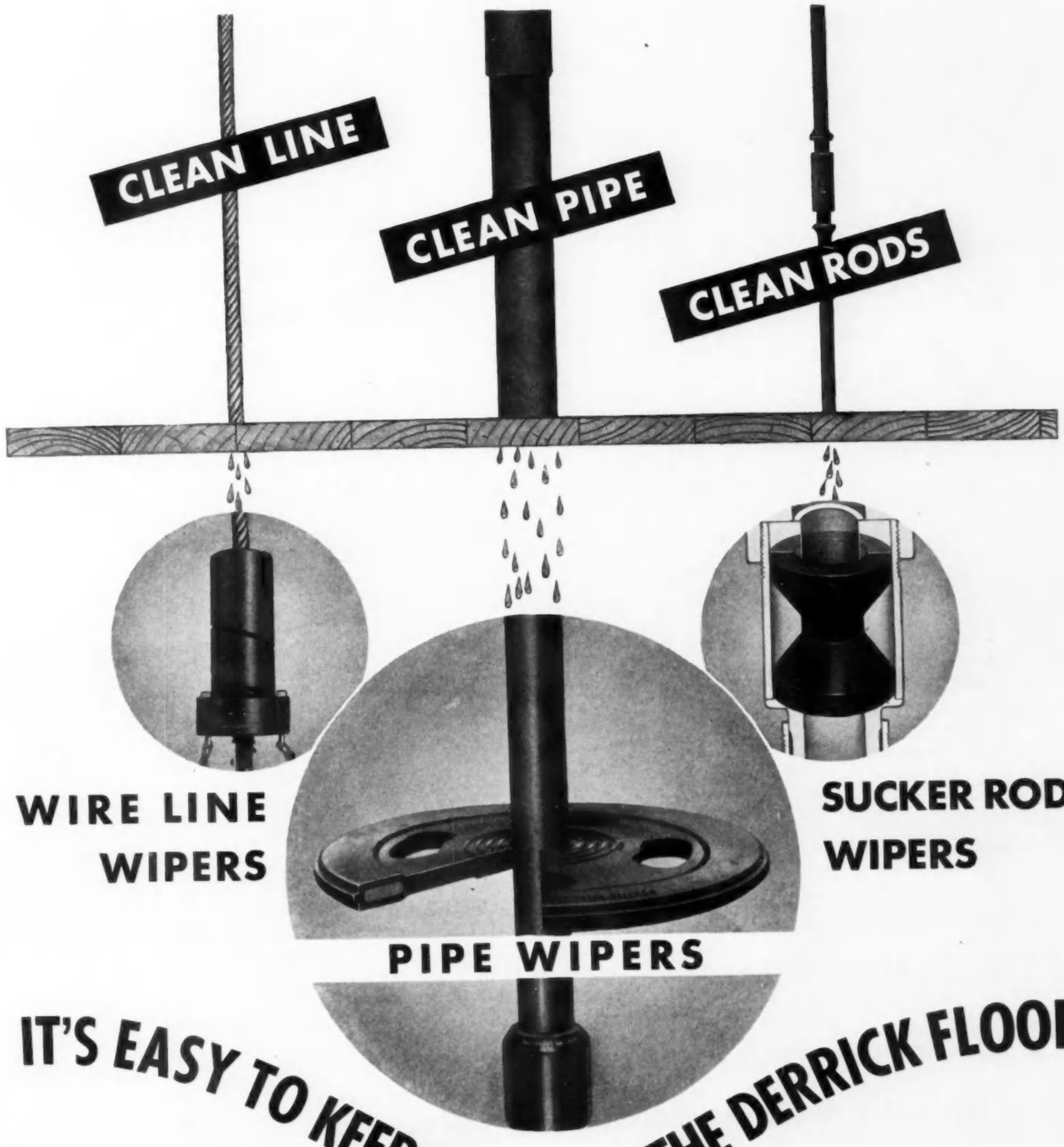
By F. R. COZZENS, Equity Oil & Gas Company

OPERATORS who air-pressure their wells eventually discover that their casing, tubing, and other underground pipe deteriorates at an exceedingly rapid rate. This is caused by the action of air contacting various substances such as iron, magnesia, sulphur, etc., thus forming mineral oxides, of which there are several, and all being destructive to iron and steel. Oxygen also has an affinity for salt, thus causing pipe damage in localities where salt water is prevalent. Nearly 30 percent of the pipe salvaged from wells in the stripper field territory of Ohio and West Virginia, where air has been used continuously for the past 20 years, must be resold at junk prices, and even a higher percentage fails to stand the strain of replacement in new wells.

In these districts, where most of the destructive underground agents are found, efforts have been made almost from the beginning to overcome the metal damage caused by airing wells. Paints, and pipe insulation materials have been the means generally used, but to withstand requirements, the treatment must be resistant to both acids and alkalies, salt, sulphur, iron, and resultant oxides. One treatment, under practical field tests has shown outstanding merit. It is a paint, or rather two paints, a combination of asphalt and aluminum.

Since asphalt and aluminum cannot be utilized in a single mixture, the operator who uses the method first cleans the outside surface of his pipe as free as possible of grease and filth, then applies a coating of aluminum paint, brushing it firmly over the surface of each section with the exception of the threaded end. This priming coat is allowed to dry for a period of 36 hours, then over it is applied a heavy coating of ordinary asphalt metal paint in the same manner. This material being heavier, and of an entirely different composition, must be brushed out until no seams or bubbles appear on the surface. After a second 36-hour drying period, the pipe, under average weather conditions is ready to run. A daub of white lead upon the threaded ends as the joints are being set up, completes the protective process.

The ability of this treatment to withstand destructive forces resulting from air-action is due, first to the aluminum base which is a metal protection against rust and corrosion, and is resilient enough to hold the asphalt top-coat without checking or peeling. Second, the asphalt top-coat is non-corrosive, resists both acids and alkalies, and also prevents the aluminum from being dissolved by oil or sludge. The combination is adaptable to almost every underground condition, and after five years of rigorous air testing, pipe receiving treatment has shown no damage except in spots where the paint had been scraped off in running. The application of the paint interferes in no way with the resale value of the pipe. It is far more durable and efficient than insulators, sometimes used for the purpose, and may be applied at one-third the cost. In most districts, one thousand feet of standard 6¼-inch pipe can be treated at an average cost of $6.00. Larger or smaller diameters and weights in proportion.



IT'S EASY TO KEEP MUD OFF THE DERRICK FLOOR

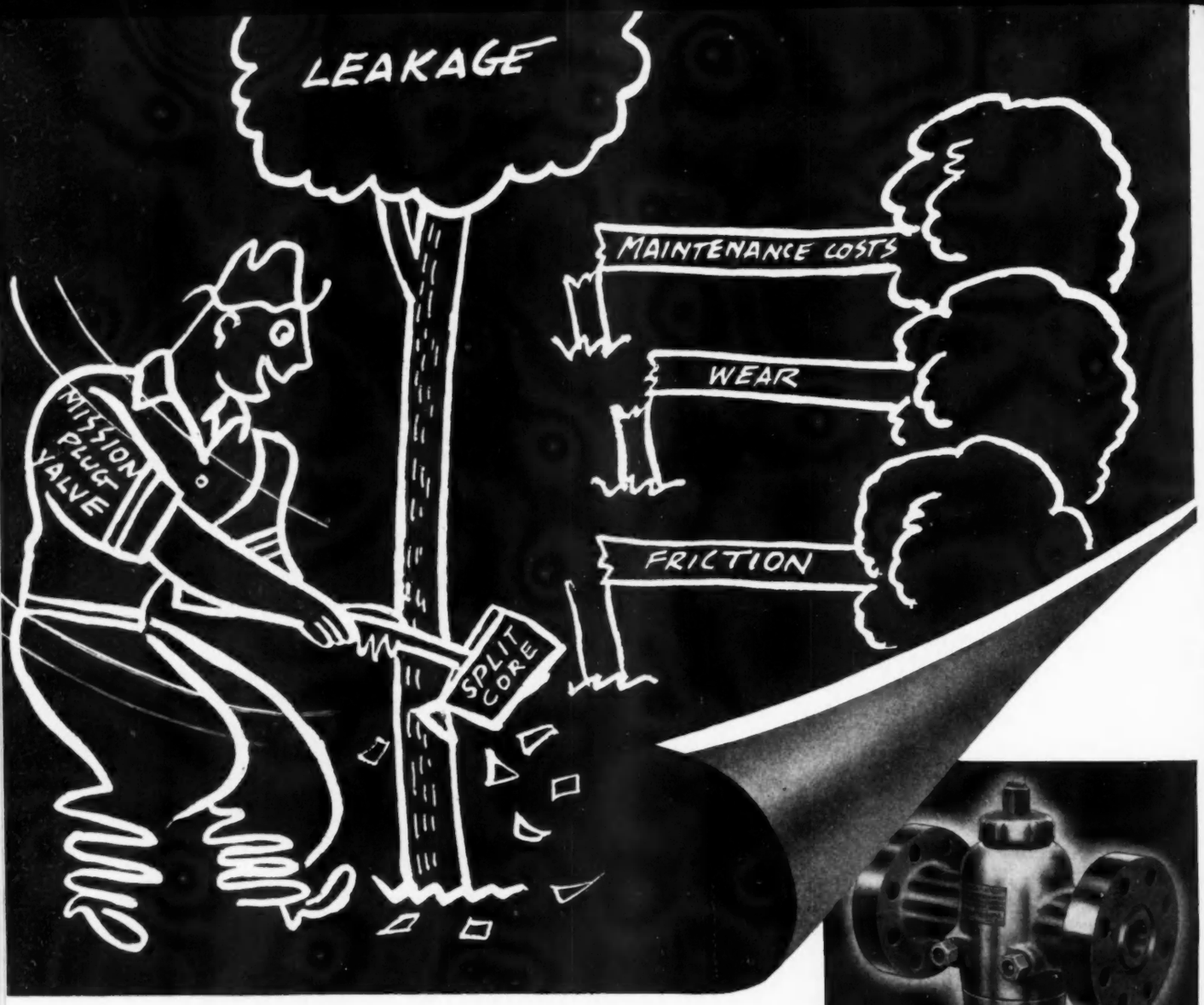
A clean derrick floor means better work by the crew, less hazards and more saving in time. These three Patterson-Ballagh wiping and stripping devices promote cleanliness, facilitate handling of wire, pipe and rods, and save in many ways. Note particularly the Pipe Wiper. It strips the pipe clean as it comes up out of the well; so clean that hosing is unnecessary. This prevents dilution of the rotary mud.

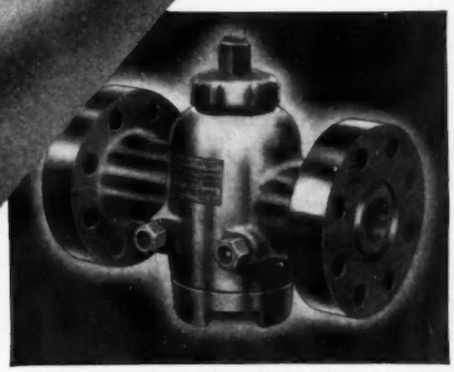
PATTERSON BALLAGH WIPERS

The Pipe Wiper is made in 9", 12", 14", 17" and 19" styles, the latter with window. All are made of the same rubber as used in Patterson-Ballagh Protectors. See Composite Catalog.

PATTERSON-BALLAGH CORP.

General Offices and Plant: 1900 E. 65th St., Los Angeles, Calif. • *Mid-Continent Office:* 1506 Maury Street, Houston • *New York City Office:* 39 Cortlandt Street





Test Pressures: 4,000 to 10,000 lbs. Tested on drilling rigs, flow lines and Christmas trees for 24 months without a failure.

Mission's New Plug Valve

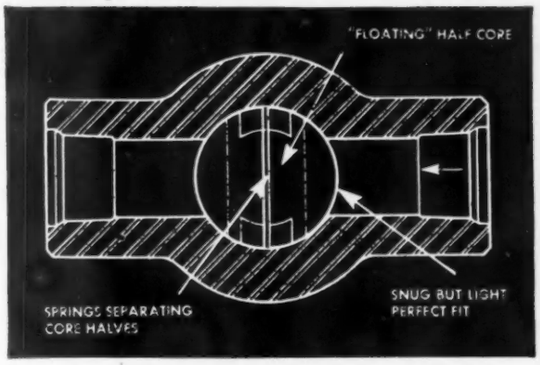
has a super-surfaced, leak-proof split core. This cuts down friction, wear and maintenance costs — also assures easy opening.

Three new features of the Mission Plug Valve will completely satisfy you that it will operate easily and give long, continuous use without leakage—even under severe conditions.

The Super-Surfaced Split Core. Splitting the core prevents any possibility of binding, and permits grinding each core half to a perfect fit. Under line pressure the upstream half "floats" — all the pressure and the only friction are on the downstream side of the valve. This is another reason why the Mission valve opens easily. In addition, friction and wear are further reduced, as the core is file-hard, corrosive-proof, and super-surfaced. This "super-surfacing" is an expensive treatment which gives the core a smooth, glazed surface.

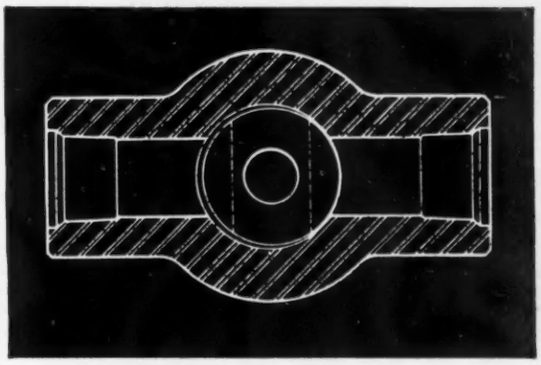
The Cylindrical Core Prevents Wedging. This enables the Mission valve to operate more easily than the old-style valve with a tapered plug. Wear is reduced and leakage is checked because a perfect seal can be constantly maintained as the straight plug always fits its seat perfectly.

Automatic Lubrication Assures a Perfect Seal. Mission, exclusively, uses line pressure to force the sealing lubricant from storage reservoirs to grease grooves which completely encircle each port opening. This constant pressure assures a perfect seal as long as a supply of grease is maintained in the reservoirs. This system adds indefinitely to the life of the valve and makes operation easier as well.



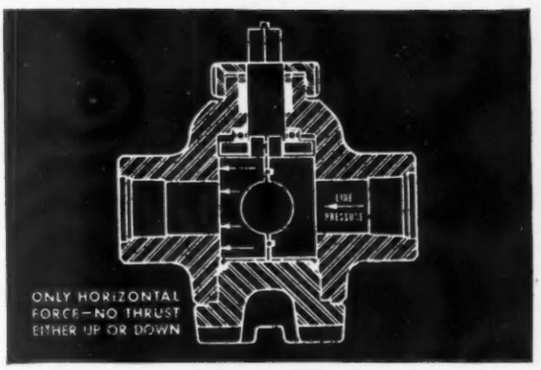
MISSION SPLIT CORE

Perfect contact with body allows instant seal under pressure. This protects surfaces from sand and grit, reduces cutting and wear, and reduces maintenance costs.



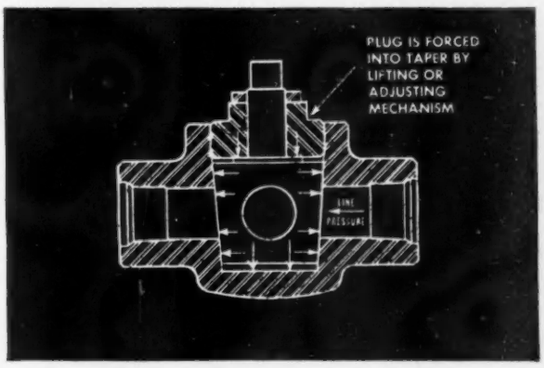
CONVENTIONAL SOLID PLUG

Unless wedged, a solid plug cannot fit its seat perfectly. As the plug wears, it cannot fit. This permits accumulation of sand and grit, accelerating wear, and greatly increases difficulty of operation.



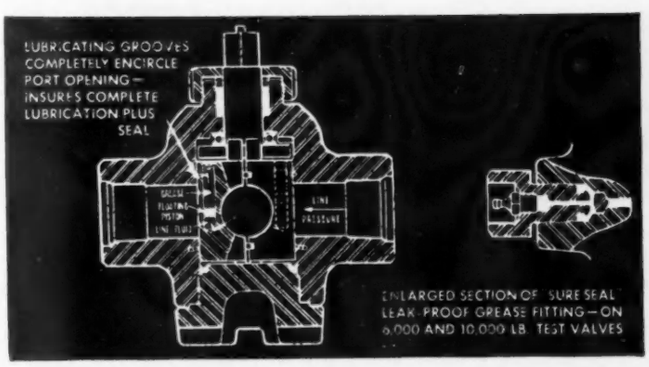
MISSION STRAIGHT CORE

Our cylindrical plug seats perfectly with minimum side wall clearance because of its design. A constant seal and complete lubrication are easily maintained. This increases valve life and assures easy operation.



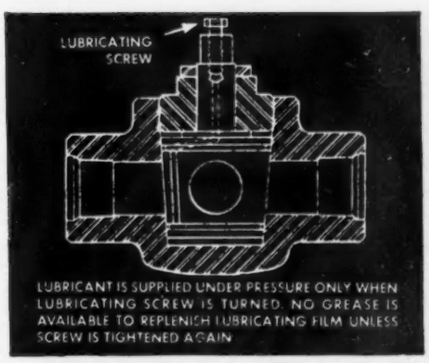
CONVENTIONAL TAPERED PLUG

A tapered plug also has vertical motion. It can seat perfectly only when wedged. Greater side wall clearance in operation makes a perfect seal difficult and allows opportunity for sand to accumulate under the seat. This increases friction and wear.


LUBRICATING GROOVES COMPLETELY ENCIRCLE PORT OPENING—INSURES COMPLETE LUBRICATION PLUS SEAL
ENLARGED SECTION OF SURE SEAL LEAK PROOF GREASE FITTING—ON 6,000 AND 10,000 LB. TEST VALVES

MISSION AUTOMATIC "FULL-PORT" LUBRICATION

Line pressure against piston in each lubricating storage reservoir automatically forces and holds sufficient lubricant in place in the grease grooves around each port to both lubricate and form a perfect seal at all times regardless of pressure.


LUBRICATING SCREW
LUBRICANT IS SUPPLIED UNDER PRESSURE ONLY WHEN LUBRICATING SCREW IS TURNED. NO GREASE IS AVAILABLE TO REPLENISH LUBRICATING FILM UNLESS SCREW IS TIGHTENED AGAIN

CONVENTIONAL LUBRICATION

Lack of constant pressure to replenish the lubricating film as rapidly as necessary can quickly cause serious damage and leakage.

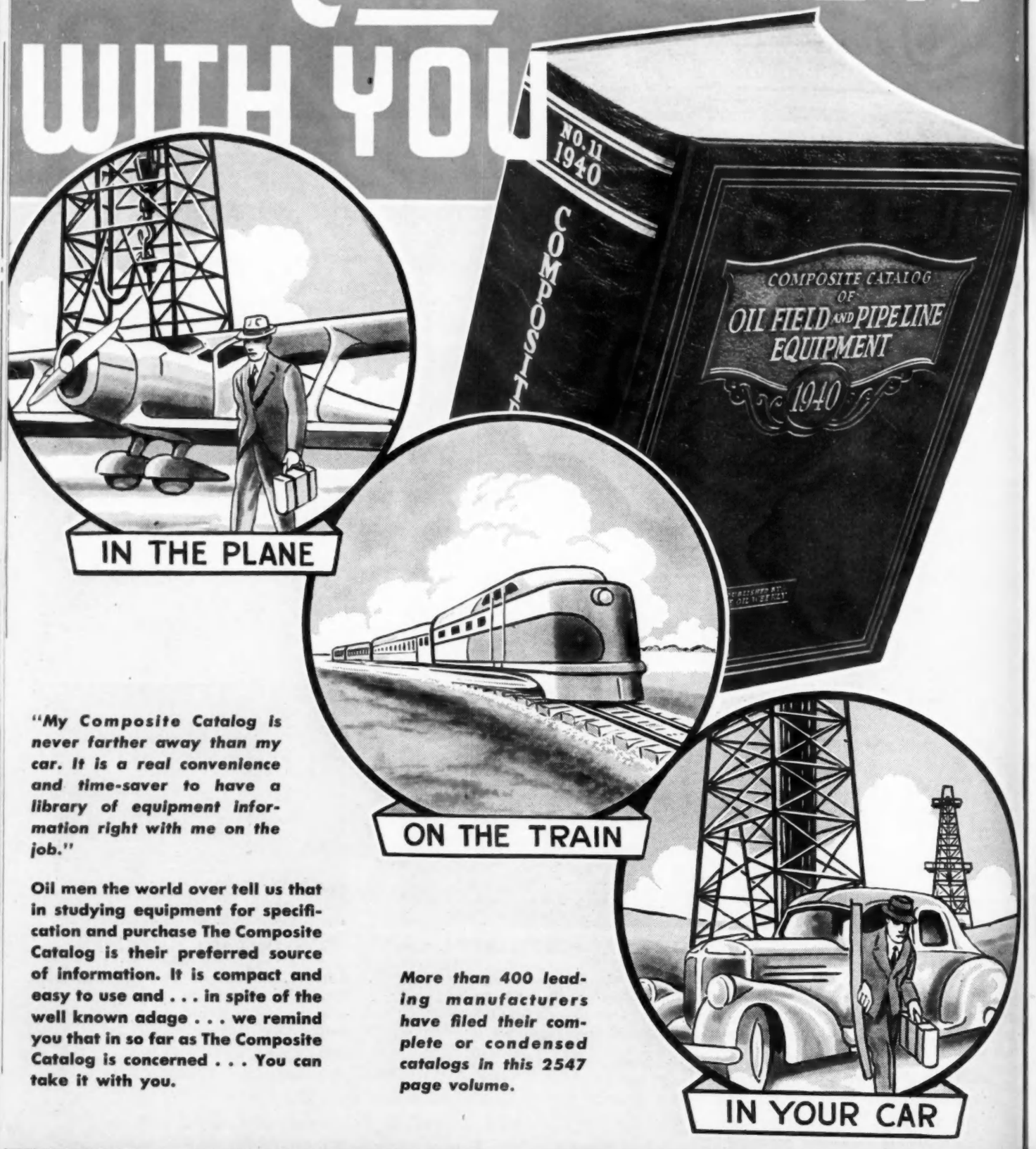
Mission Plug Valves are made with the same careful standards of metallurgical research, manufacturing precision and inspection that have made each Mission product a leader in its field.

Mission Plug Valves are manufactured in 2″, 3″ and 4″ sizes and in three grades—4,000, 6,000 and 10,000 lb. test pressures—and are available or can be ordered from leading oil well supply warehouses. Prices of each style and size compare favorably with those of the best plug valves available. Full details are available on pages 1716 to 1724 of The Oil Weekly Composite Catalog of 1940.

Install Mission Plug Valves under your most difficult conditions. They will save you time, labor and money.

MISSION MANUFACTURING CO. · HOUSTON, TEXAS NEW YORK EXPORT OFFICE: 30 ROCKEFELLER PLAZA

YOU *Can* TAKE IT WITH YOU



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THE COMPOSITE CATALOG

Modification of California Proration Formula Proposed

SINCE June of 1939, when California oil operators commenced prorating production under a voluntary system using what is termed a uniform curtailment formula, new wells have added additional potential output at a rate faster than the decline of existing wells. Consequently, it has been necessary to continually impose more drastic curtailment of well output to make room for new wells. This situation has now reached such a point the formula must be modified, if large wells are to receive any premium for their ability to produce.

The formula is framed to give a living output to small wells; to equalize the proration burden on large wells; and places a maximum quota on the largest of the big wells; and in doing this considers depth of the producing sands. Currently, the state's potential approximates 2,800,000 barrels daily, while indicated demand averages below 600,000 barrels daily.

In every month since the formula was adopted it has been necessary to impose heavier curtailment against larger wells in order to hold production to indicated demand. This has required periodic modification of the uniform formula proration output of larger wells.

Since the uniform formula was first applied new well completions have made necessary a reduction in top well allotments from an original 250 barrels daily to 174 barrels daily for May. At the same time corresponding reductions have been made in allotments of intermediate wells falling between the top group and the marginal well classifications.

Intermediate well allotments have been reduced progressively on the basis of a power factor which has been lowered from month to month. The power factor applies to remaining potential production in excess of an earned depth minimum. The earned depth minimum is computed on the basis of 5 barrels daily allotment for each 1000 feet of depth, and an additional 1 barrel daily for each 1000 feet of depth after the first 1000 feet.

TABLE 1

Minimum Allotment Table

Depth	Present Minimum April 1, 1940	Proposed Minimum Allotment		
	"A"	"B"	"C"	"D"
2000	11.0	10.9	10.8	10.8
2500	14.4	14.2	14.1	13.9
3000	18.0	17.8	17.5	17.3
3500	21.9	21.5	21.2	20.8
4000	26.0	25.5	25.0	24.5
4500	30.4	29.7	29.1	28.4
5000	35.0	34.2	33.3	32.5
5500	39.9	38.9	37.8	36.8
6000	45.0	43.8	42.5	41.3
6500	50.4	48.9	47.4	45.9
7000	56.0	54.3	52.5	50.8
7500	61.9	59.9	57.8	56.0
8000	68.0	65.7	63.4	61.0
8500	74.4	71.7	69.1	66.4
9000	81.0	78.0	75.0	72.0
9500	87.9	84.5	81.2	77.8
10000	95.0	91.3	87.5	83.8
10500	102.4	98.2	94.1	89.9
11000	110.0	105.4	100.9	96.3
11500	117.9	112.9	107.9	102.8
12000	126.0	120.5	115.0	109.5

A April 1, 1940 Minimum = 5 B/D for first 1000' + 1 B/D for each additional 1000'.
B April 1, 1940 Minimum = 5 B/D for first 1000' + .917 B/D for each additional 1000'.
C April 1, 1940 Minimum = 5 B/D for first 1000' + .834 B/D for each additional 1000'.
D April 1, 1940 Minimum = 5 B/D for first 1000' + .750 B/D for each additional 1000'.

To illustrate, a well 5000 feet deep during May would have a minimum allotment for depth of 35 barrels daily, made up of 5 barrels for the first thousand, 6 for the second, 7 barrels for the third thousand, etc. Should its potential exceed 35 barrels daily, the well would also receive the .732 power factor of the remaining potential in excess of 35 barrels daily, provided the allotment thus earned does not exceed 174 barrels daily.

Marginal wells are those whose potential capacity is less than their depth minimum allowables. When the top allotment of 250 barrels daily was first applied in June, 1939, the power factor used against remaining potential was .76. In April this year it had been reduced to .735 and a further reduction to .732 was made for May.

The steady reduction in allotments to large wells have progressed to a point where it is apparent that a modification in the present formula which will affect the depth minimum principles must be made to preserve the equity of the plan and give due credit to the potential factor in applying curtailment. Unless an adjustment is made the system now in effect will continue to give less weight to potential capacity, gradually approaching a flat minimum allotment for all wells in the state.

To provide against such an eventuality, the Central Committee administering curtailment in California has under consideration proposals advanced by a sub-committee after a thorough investigation of the subject which call for modification of the formula. Principal difference between the sub-committee's proposal and the usual change made in the formula at regular monthly intervals lies in the fact that consideration is now being given to revising downward the minimum depth allotments.

Nine-Month Period

These studies have indicated the advisability of a programmed modification of the present formula over a period of at least nine months, with principal changes being made in depth minimum provisions, although sizeable reductions will also be ordered in both the power factor applied against remaining potential and in top well allotments.

Expectations are that on the basis of currently indicated drilling programs in California fields, intermediate and top wells now producing will be called upon over the next 9 months to give up some 20 percent of their present allowables in order to provide room for new wells. This includes, of course, normal decline and a continuation of the state quota at present levels and would be required under any formula.

Under the proposed modification of the formula it is expected that the more than 18,000 wells in the state will be curtailed an additional 60,000 barrels daily 9 months hence. Of the total, nearly 20,000 barrels

Found

Valve cups that give dependable, economical operation year after year. Owners everywhere enthusiastic. Answer to the following names.

DARCOVA
(Orange Label) the standard for over thirty years under severe service at all depths.

DARVAL
(Blue Label) for service in wells to approximately 2000 feet in depth.

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(Green Label) the popular favorite for wells to 800 feet in depth.

DARCOVA PUMCUPS for Pumps.

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Williamsport, Pa.

daily will be contributed through downward revision of depth minimums; 20,000 barrels daily by further reduction of the power factor; and 20,000 barrels daily through reduction in top-well allotments. The modification is also expected to remove some 200 wells from the top-well bracket and place them in the intermediate grouping.

Effect of the proposed formula change on wells of varying potential is indicated in the following tabulation showing percentage reduction to apply against wells in different potential capacity classifications:

Potential Group Barrels Daily	Percent Allotment Reduction
10 to 25	1.2
25 to 50	3.5
50 to 100	5.3
100 to 200	7.6
200 to 400	12.8
400 to 800	21.6
800 to 1000	20.7
1000 and up	12.9

As indicated here, modification of the formula will apply heaviest against intermediate wells, with the highest percentage falling on wells ranging in potential from 400 to 800 barrels daily.

On May 1, 1940, there were a total of 843 so-called top wells in California fields. These wells received allotments of 174 barrels daily each. It is anticipated allotments to top wells will be reduced to 155 barrels daily 9 months after the proposed modification in the formula has become effective. This would represent a cut in the allotment of 12.9 percent as indicated in the above tabulation of percentages.

In order to program the future course of curtailment, the Central Committee made an extensive survey of forward drilling commitments of the California industry to the end of 1940. This study points to 474 new well completions in the first half of the year and about 823 new wells during the full year. In addition to new wells brought on, recompleted wells are expected to number 264, making a total of 1087 new and recompleted projects for the 12 months. This would compare with 1000 new and recompleted wells brought on production in the state in 1939.

Plan Less Drilling

In an effort to reduce 1940 drilling activity, the committee appointed a new well sub-committee to meet with producers in an effort to secure postponement of certain drilling plans. Their work is expected to bring a reduction in 1940 drilling ranging from 15 to 20 percent of original schedules, wells not drilled this year to be carried over into 1941.

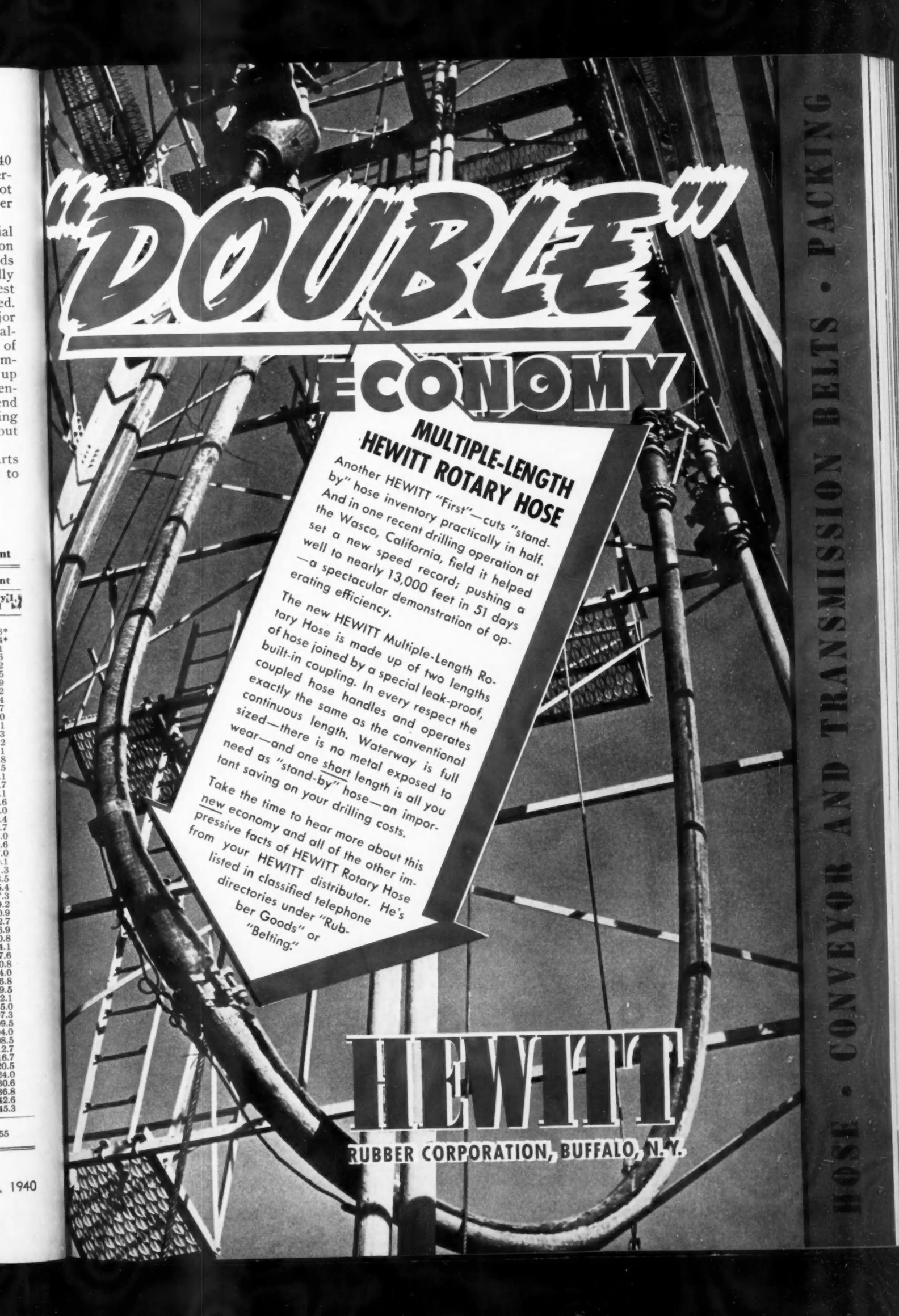
Studies completed by this special committee point to the conclusion that in nearly all California fields known proven acreage will be fully drilled by 1941 should their request for later drilling not be observed. Therefore, unless additional major discoveries are made over the balance of this year, the problem of finding allotments for newly completed wells will begin to ease up in 1941. Should the state's potential capacity establish a down-trend in 1941, it would end an upswing that has been in effect for about 6 years.

There are three component parts to the allocation plan presented to

TABLE 2
Allocation Table
Proposed Plan for 1940
Remaining Potential and Allotment

Remaining Potential	Remaining Allotment	
	April 1, 1940 Power Factor	January 1, 1941
	.735 p. f.	
5	3.3	3.3*
10	5.4	5.4*
15	7.3	7.1
20	9.0	8.6
25	10.7	10.2
30	12.2	11.5
35	13.7	12.9
40	15.1	14.2
45	16.4	15.4
50	17.7	16.7
60	20.3	19.0
70	22.7	21.1
80	25.1	23.3
90	27.3	25.2
100	29.5	27.1
110	31.7	28.8
120	33.8	30.5
130	35.8	32.1
140	37.8	33.7
150	39.8	35.1
160	41.7	36.6
170	43.6	38.0
180	45.5	39.4
190	47.3	40.7
200	49.1	42.0
220	52.7	44.6
240	56.2	47.0
260	59.6	49.1
280	62.9	51.3
300	66.2	53.5
320	69.4	55.4
340	72.5	57.3
360	75.7	59.2
380	78.7	60.9
400	81.8	62.7
450	89.2	66.9
500	96.3	70.8
550	103.3	74.1
600	110.1	77.6
650	116.8	80.8
700	123.4	84.0
750	129.8	86.8
800	136.1	89.5
850	142.0	92.1
900	148.4	95.0
950	154.4	97.3
1000	160.3	99.5
1100	171.9	104.0
1200	....	108.5
1300	....	112.7
1400	....	116.7
1500	....	120.5
1600	....	124.0
1800	....	130.6
2000	....	136.8
2200	....	142.6
2300	....	145.3
Top Producible Allotment	182	155

* .735 p. f.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ECONOMY
MULTIPLE-LENGTH
HEWITT ROTARY HOSE
Another HEWITT "First"—cuts "stand-by" hose inventory practically in half. And in one recent drilling operation at the Wasco, California, field it helped set a new speed record; pushing a well to nearly 13,000 feet in 51 days —a spectacular demonstration of operating efficiency.
The new HEWITT Multiple-Length Rotary Hose is made up of two lengths of hose joined by a special leak-proof, built-in coupling. In every respect the coupled hose handles and operates exactly the same as the conventional continuous length. Waterway is full sized—there is no metal exposed to wear—and one short length is all you need as "stand-by" hose—an important saving on your drilling costs.
Take the time to hear more about this new economy and all of the other impressive facts of HEWITT Rotary Hose from your HEWITT distributor. He's listed in classified telephone directories under "Rubber Goods" or "Belting."
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the Central Committee as a modification of the uniform formula.

First of these is a gradual reduction in the minimum allotment. A reduction in the minimum is to be accomplished over a period of 9 months to a year and would be made by changing the minimum to 5 barrels daily for the first 1000 feet, plus ¾ barrel daily for each additional 1000 feet. This total reduction of the minimum would be taken in three equal steps, either every third month or every fourth month. This is adequately illustrated in Table 1. It will be noted that the change in minimum at shallow depths is relatively slight, totaling 0.2 barrel at 2000 feet and grading upward to 11.2 barrels at 10,000 feet.

The second part of the plan embraces reduction in the remaining allotment resulting from a change of power factor. The change in the power factor proposed does not reduce the remaining allotment below 12 barrels daily remaining potential. At 25 barrels potential a slight reduction is made, and the reduction progressively increases at higher potentials so that the remaining allotment at 100 barrels daily potential is decreased from 29.5 to 27.1; the 200 barrels daily potential from 49.1 to 42.0. The effect of this change is to materially increase the potential required to receive top allotment at normal depths. Table 2 shows the reduction in the remaining allotment for a given remaining potential comparing the April, 1940, formula with the estimate for January 1, 1941. The effect of this type of power-factor reduction is to cut the remaining allotment of the upper intermediate and lower top groups of wells with lesser reduction to the lower intermediate wells above 25 barrels daily and no cut below 12 barrels daily potential.

Third, the plan contemplates continued reduction of the top allotment which, however, because of the contributions of the preceding two steps, will not be as drastic as the top allotment cuts which have been made since June of 1939. The January 1, 1941 top allotment, as shown in Table 3, is 155 barrels daily.

Because the top potential required to receive a top allowable has been increased, it is expected there will be fewer top wells and more of the state's remaining allowable will be distributed on the basis of potential.

TABLE 3

Allocation Table—Proposed Plan for 1940

	ALLOTMENT ACCORDING TO DEPTH											
	2000 Feet		4000 Feet		6000 Feet		7000 Feet		8000 Feet		10,000 Feet	
Potential	April 1, 1940	January 1, 1941	April 1, 1940	January 1, 1941	April 1, 1940	January 1, 1941	April 1, 1940	January 1, 1941	April 1, 1940	January 1, 1941	April 1, 1940	January 1, 1941
5	.735 p.f. 5*	5*	.735 p.f. 5*	5*	.735 p.f. 5*	5*	.735 p.f. 5*	5*	.735 p.f. 5*	5*	.735 p.f. 5*	5*
10	10*	10*	10*	10*	10*	10*	10*	10*	10*	10*	10*	10*
15	13.8	13.7	15*	15*	15*	15*	15*	15*	15*	15*	15*	15*
20	16.0	15.8	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*
25	18.0	17.5	25*	25*	25*	25*	25*	25*	25*	25*	25*	25*
30	19.7	19.1	28.8	28.0	30*	30*	30*	30*	30*	30*	30*	30*
35	21.3	20.6	31.0	29.9	35*	35*	35*	35*	35*	35*	35*	35*
40	22.9	22.0	33.0	31.7	40*	40*	40*	40*	40*	40*	40*	40*
45	24.4	23.4	34.7	33.2	45*	43.7	45*	45*	45*	45*	45*	45*
50	25.8	24.7	36.3	34.7	48.3	46.2	50*	50*	50*	50*	50*	50*
60	28.5	27.2	39.4	37.6	52.3	49.5	58.8	55.8	60*	60*	60*	60*
70	31.0	29.5	42.2	40.0	55.7	52.4	63.0	59.2	69.7	66.0	70*	70*
80	33.5	31.8	44.7	42.5	58.7	55.0	66.3	62.1	74.2	69.4	80*	80*
90	35.9	33.9	47.3	44.7	61.4	57.4	69.4	64.7	77.7	72.3	90*	87.7
100	38.1	35.8	49.7	46.9	64.0	59.8	72.2	67.2	80.8	74.8	98.3	91.2
110	40.3	37.7	52.0	48.9	66.5	62.0	74.7	69.5	83.6	77.3	102.3	94.2
120	42.5	39.5	54.2	50.8	68.9	64.1	77.3	71.7	86.2	79.6	105.7	97.0
130	44.6	41.2	56.4	52.5	71.2	66.2	79.7	73.8	88.8	81.9	108.7	99.4
140	46.6	42.8	58.5	54.3	73.4	68.0	82.0	75.8	91.2	84.0	111.4	101.8
150	48.6	44.3	60.6	55.9	75.6	69.8	84.2	77.1	93.5	86.0	114.0	104.1
160	50.6	45.9	62.6	57.5	77.7	71.5	86.4	79.5	95.7	87.9	116.5	106.3
170	52.5	47.3	64.6	59.0	79.8	73.2	88.5	81.1	97.9	89.6	118.9	108.3
180	54.4	48.7	66.5	60.4	81.8	74.8	90.6	82.8	100.0	91.3	121.2	110.2
190	56.3	50.1	68.5	61.9	83.8	76.3	92.6	84.3	102.2	93.0	123.4	111.9
200	58.1	51.3	70.3	63.2	85.7	77.7	94.6	85.8	104.2	94.5	125.6	113.7
220	61.7	53.8	74.0	65.9	89.5	80.5	98.5	88.7	108.2	97.5	129.8	116.8
240	65.2	56.3	77.6	68.5	93.2	83.1	101.2	91.4	112.0	100.2	133.8	119.9
260	68.8	58.7	81.1	70.7	96.8	85.6	105.8	93.8	115.7	102.8	137.7	122.6
280	72.1	60.9	84.5	73.3	100.3	88.0	109.4	96.3	119.3	105.4	141.4	125.3
300	75.4	63.1	87.9	75.6	103.7	90.3	112.8	98.7	122.8	107.8	145.0	127.8
320	78.6	65.1	91.2	77.6	107.1	92.4	116.2	100.9	126.2	110.0	148.6	130.0
340	81.8	67.1	94.4	79.6	110.4	94.5	119.5	103.0	129.6	112.2	152.0	132.6
360	84.9	68.9	97.6	81.6	113.6	96.5	122.8	105.1	132.9	114.2	155.4	134.8
380	88.0	70.8	100.7	83.5	116.8	98.4	126.0	107.0	136.1	116.2	158.7	136.9
400	91.1	72.7	103.8	85.1	119.9	100.2	129.1	108.9	139.3	118.1	162.0	138.8
450	98.6	76.8	111.3	89.5	127.5	104.6	136.8	113.4	147.0	122.6	169.0	143.7
500	105.8	80.7	118.6	93.5	134.9	108.6	144.3	117.6	154.5	126.8	178.0	147.9
550	112.8	84.2	125.7	97.0	142.0	112.4	151.5	121.3	161.8	130.7	....	151.8
600	119.7	87.7	132.7	100.5	149.0	116.0	158.4	124.9	168.8	134.3	....	155.0
650	126.3	90.9	139.4	103.7	155.8	119.3	165.5	128.1	175.7	137.7	....	....
700	133.0	93.9	146.0	107.0	162.5	122.5	172.0	131.6	178.0	141.0	....	....
750	139.4	96.9	152.4	110.0	169.0	125.5	178.0	134.7	....	144.1	....	....
800	145.7	99.8	158.8	112.8	175.4	128.5	....	137.7	....	147.0	....	....
850	151.9	102.6	165.1	115.5	178.0	131.2	....	140.2	....	149.9	....	....
900	158.1	104.9	171.5	118.3	....	133.9	....	142.9	....	152.6	....	....
950	164.1	107.6	177.3	120.5	....	136.5	....	145.6	....	155.0	....	....
1000	170.1	109.8	178.0	122.8	....	139.0	....	147.9	....	....	....	....
1100	178.0	114.2	....	127.4	....	143.7	....	152.4	....	....	....	....
1200	....	118.7	....	131.6	....	148.1	....	155.0	....	....	....	....
1300	....	123.0	....	136.2	....	152.3	....	....	....	....	....	....
1400	....	127.0	....	140.1	....	155.0	....	....	....	....	....	....
1500	....	130.7	....	143.9	....	....	....	....	....	....	....	....
1600	....	134.3	....	147.4	....	....	....	....	....	....	....	....
1700	....	137.7	....	150.9	....	....	....	....	....	....	....	....
1800	....	141.0	....	154.2	....	....	....	....	....	....	....	....
1900	....	144.1	....	155.0	....	....	....	....	....	....	....	....
2000	....	147.2	....	....	....	....	....	....	....	....	....	....
2100	....	150.1	....	....	....	....	....	....	....	....	....	....
2200	....	153.0	....	....	....	....	....	....	....	....	....	....
2300	....	155.0	....	....	....	....	....	....	....	....	....	....

* Exempt.

HIGHLIGHTS IN THE WEEK'S NEWS

Exports

Britain may turn to Americas for larger portion of oil needs

Decision of the British government to keep its ships out of the Mediterranean was seen in Washington as offering possibilities for increased exports of oil from the United States and Latin America.

Much depends, it was admitted, upon whether the rerouting of British shipping around the Cape of Good Hope will continue, and the ability of the present British tanker fleet to keep the flow of oil from the Near East at an undiminished volume.

While it is expected the British government has taken steps to reorganize their tanker movement so as to continue to get the bulk of their petroleum requirements from the Persian oil fields, some confidence was expressed that it would be necessary for England to draw on supplies in the United States, Colombia and Venezuela if the closing of the Mediterranean continues for any length of time.

While United States oil exports have not experienced the war "boom" which many in the industry anticipated last September, there is now an apparent feeling that the Allies will be forced to turn to this country for supplies with which to build up reserves for use in the event of a major campaign.

The greatly increased "life-line" from the British Near East possessions to the homeland brought about by the adoption of the much longer route around the Cape of Good Hope, it is said, will make it necessary for England greatly to increase its tanker fleet if its supply of oil is to remain unimpaired.

Control

Federal control condemned in business leaders' resolution

Resolutions condemning federal control of the oil industry as an "interference" with the development of state regulation were adopted May 2 by the United States Chamber of Commerce, concluding its twenty-eighth annual meeting. (See page 47.)

"Individual states have made pronounced progress in conserving their petroleum resources, and by interstate compacts they have taken action to meet problems of joint interest," the resolutions declared.

"The slowness of one or more states to cooperate fully in the compact movement, and instances of failure within states of proper application of conservation laws, should not be permitted to obscure the accomplishments of the states and their determination to solve the problem through their own efforts.

"Centralization in the federal government of control over petroleum production would interfere with the development of state measures, and with correlation of state action through interstate compacts to conserve this important natural resource in harmony with the principle of preserving state and local authority, responsibility and initiative."

The chamber also criticized invasions of state rights by the federal government, citing as an instance of this infringement "the increasing abandonment of the principle of mineral entry and the discouragement of private exploration and development of our mineral resources, with the substitution therefor of a leasing system by which the federal government becomes a landlord rather than a stimulator of enterprise and free initiative."

"It is a cardinal principle that all rights not specifically granted to the federal government are reserved to the several states," it was pointed out. "This principle in recent years has been increasingly infringed by federal encroachment in almost every field.

"These and numerous other examples of federal invasion of state sovereignty result not only in retardation of normal state enterprise and development with concomitant impairment of political and economic statehood, but are a source of continually increasing and wasteful federal expenditure."

In resolutions on taxes, the chamber called for a reduction in individual surtaxes "to a level of greater productivity," a shorter holding period of long-term capital gains with a rate not over 12½ percent, a corporation tax not heavier than 15 percent, with restoration of consolidated returns, extension to 5 years of the period for carrying over net losses, provisions for depreciation, depletion and obsolescence that will protect capital against impairment, and elimination of double taxation of dividends.

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TNEC report on oil to hold interest of various industries

The Temporary National Economic Committee, which last year held exhaustive hearings on monopoly conditions in the oil industry, has completed its investigations and is preparing to write its final report which, however, probably will not be submitted to Congress until next session.

In that phase of the report dealing with its oil study, the O'Mahoney committee is expected to go deeply into the several questions which have been prominently before Congress this year —ownership of pipe lines and tankers by the large companies and the marketing operations of the integrated corporations. Also, it is believed, the report will have something to say about state conservation laws and their use as a means of stabilizing prices, in which members of the committee were deeply interested during the hearings.

Because of the current agitation against chain-store operations and the marketing activities of producers in important industries, the committee's views on divorcement will be of considerable interest, not only to oil men but to other businesses having similar problems, since they will largely reflect the ideas of such foes of "big business" as Leon Henderson of the Securities and Exchange Commission.

The question of divorcement is currently prominent in Washington, with hearings due to open May 16 on a bill sponsored by Senator Matthew M. Neely of West Virginia, providing a prohibition against the operation of theatres by motion picture producers and distributors, a situation analogous to that existing in the oil industry.

Eighteen days later, in New York, the government will open trial of an anti-trust suit against the integrated film companies, in which divorce will be asked, among other remedies sought to cure alleged monopolistic conditions in that industry.

Appearing before a Senate subcommittee last month at a preliminary hearing on the Neely divorce bill, Assistant Attorney General Thurman Arnold, in charge of anti-trust enforcement, compared the situation in the film industry with that existing in oil and emphasized that the Department of Justice is determined to test out the divorce issue, indicating that if it was successful in the motion picture case a similar suit might be brought in oil.

While there is no possibility of the Neely bill receiving final action this session, the independent exhibitors are determined to press the legislation to give support to the anti-trust suit, with indications that the issue of divorce will be revived when Congress meets again next January.

Allowables

Stricter allowables are scheduled for this month

Materially stricter control of crude oil production is in prospect for May, allowables having been brought considerably closer to indicated market demand than in April.

Consequently, the accumulation of crude oil in storage, which amounted to more than 4,000,000 barrels in April, should be almost, if not quite, eliminated.

Eight prorated states, which account for 83 percent of all United States crude oil output, have scheduled May allowables which are in the aggregate 107,680 barrels daily, or 3 percent, above the indicated average daily market demand, as estimated by the United States Bureau of Mines.

In April, the same states adopted allowables 249,066 barrels daily, or 8.4 percent, above market requirements; and between March 30 and April 20 crude stocks in the United States increased from 250,561,000 to 254,881,000 barrels, a rise of 4,320,000 barrels.

The additions to stocks in the first three weeks of April were heaviest in Texas, where allowables were highest above indicated demand. The state added approximately 2,400,000 barrels of crude to storage, including around a million barrels each in Eastern Texas and West Texas. Oklahoma added 1,000,000 barrels, despite the fact that the state's allowable conformed with the estimated market demand. Unprorated Illinois added about 1,300,000 barrels. South Louisiana, in contrast, showed a 500,000-barrel decrease. Stocks of foreign crude were increased 500,000 barrels within the three weeks.

Under the May allowables, Texas will be prorated within 76,300 barrels daily of the estimated market demand, as against an excess of 182,433 barrels a day under the April schedule.

Louisiana will show an excess of 28,580 barrels daily in May, compared with 33,133 barrels daily in April. Arkansas will continue 5500 barrels above demand. New Mexico will cut its excess to 3100 barrels daily from 14,000 barrels, and California to 600 from 2000 barrels. Kansas will conform with the indicated market, whereas the state showed a 19,000-barrel excess last month. Oklahoma will continue to take the advice of the bureau. Michigan is expected to produce about 5200 barrels a day less than market demand, as compared with an indicated deficiency of 1000 barrels for April.

Details of the state allowables and Bureau of Mines estimates of demand appear in an accompanying table.

Oklahoma cuts to 408,100 barrels in a 90-day order

The Oklahoma Corporation Commission last week ordered the state's crude oil production held to 408,100 barrels daily for May, June and July, recognizing the demand estimate of the United States Bureau of Mines and a recent recommendation of the Interstate Oil Compact Commission to its member states. April allowable was 413,000 barrels.

Oklahoma producers and purchasers previously met and agreed to the 90-day proposal without a single dissent. The order authorizes the State Conservation Department to make necessary adjustments between pools within the allowable figure during the 90-day period.

Kansas cut conforms to bureau estimate

May allowable for Kansas was set at 158,100 barrels daily by the Corporation Commission, conforming to the United States Bureau of Mines estimate of demand, or an increase of 7100 barrels over the April figure.

Potential production of Kansas crude oil wells reached a new peak of 5,384,182 barrels daily on April 20, conservation officials reported. The figure was based on the rated productive capacity of 19,931 wells, compared to 19,835 producers rated at 5,218,583 barrels on March 20.

Of the state's 19,931 wells, 5,855 were prorated producers rated at 5,342,183 barrels, and 14,076 were minimum wells allowed to produce 42,000 barrels a day.

New Mexico cuts 7000 barrels to 107,000 barrels for May

The New Mexico Oil Conservation Commission last week cut the daily allowable for May back to 107,000 barrels, or 7000 barrels below the April figure, but 3100 barrels above the recommendation of the United States Bureau of Mines.

Allowables Nearer Indicated Demand in May

(Barrels Daily)

STATE	Bureau of Mines Estimate of Demand	State Allowable Beginning of Month	Excess or Deficiency of State Allowable	Percent Excess or Deficiency
Arkansas	64,500	70,000	+ 5,500	+ 8.5
California	592,600	592,000*	— 600	— .01
Kansas	158,100	158,100	.....	.....
Louisiana	264,500	293,080	+ 28,580	+ 10.8
Michigan	63,200	58,000	— 5,200	— 8.2
New Mexico	103,900	107,000	+ 3,100	+ 2.9
Oklahoma	408,100	408,100	.....	.....
Texas	1,344,200	1,420,500†	+ 76,300	+ 5.6
Total eight states	2,999,100	3,106,780	+107,680	+ 3.0
Other states	601,900	.....	.....	.....
Total United States	3,601,000	.....	.....	.....

* Recommendation of Central Committee of California Oil Producers.
† Daily average, considering general shutdown May 1, and 14 shutdown days in East Texas Field.

Courts

Declare Louisiana does not contemplate lease cancellation

Statements published last week that the Louisiana attorney general had initiated a move to get cancelled part of a 500,000-acre lease on state-owned marine ways in Terrebonne Parish held by The Texas Company have been declared incorrect by a representative of the state's mineral division.

The mineral division representative stated there was no question in connection with The Texas Company's Lease No. 188. However, he said a letter had been written to Louisiana Land & Exploration Company calling the latter's attention to a clause in Lease No. 200 which provides for the drilling of another well in case of oil indications, which assertedly have been found. It was explained that no legal suit was contemplated, however.

Renew efforts to force alcohol use in motor fuel

Efforts of the farm bloc in Congress to force use of agricultural alcohol in motor fuel were renewed last week with the introduction of a bill in the House to prohibit use of unblended gasoline after December 31, next.

The measure, sponsored by Representative Rudolph G. Tenerowicz, Michigan, would not only prohibit interstate commerce in unblended motor fuels but would make it unlawful for any person to transport any person or property in interstate commerce in any internal-combustion propelled vehicle unless blended motor fuel is used.

The bill provides that, starting with a minimum 2 percent in 1941, the proportion of agricultural alcohol used as a blend shall be increased by 2 percent yearly until 1945, when a 10 percent blend would be reached.

Violations of any provisions of the proposed act would be punishable by fine of not exceeding $10,000, or imprisonment for not more than two years, or both.

The bill has been referred to the House Interstate and Foreign Commerce Committee.

Houston asks for 1941 A.A.P.G. convention

With approval of the executive committee, the American Association of Petroleum Geologists will hold its 1941 annual meeting in Houston. The Houston Geological Society voted May 2 to sponsor the meeting and to invite the national organization to be its guest for the twenty-sixth convention.

The invitation was unanimously approved after John Vetter, A.A.P.G. vice president, reported that sentiment of the executive committee favored a South Texas site for the meeting. A survey of Houston's hotel facilities showed there will be ample accomodations for attendance in excess of 2500.

The annual meeting must be held in either March or April, as specified by the organization's constitution. At the last annual meeting in Chicago, both Galveston and Denver officials and civic organizations sought the 1941 meeting.

Plan for Federal Oil Control Given Vigorous Challenge

ADMINISTRATION efforts to impose federal control on the oil industry were vigorously challenged before the United States Chamber of Commerce at its annual meeting in Washington last week as inimical to the constitutional rights of the individual and the state and as bearing the seed of regimentation and tyranny.

One of the major subjects to receive the attention of the chamber, the problem of the Cole bill was brought before the organization April 29 by T. H. Barton, president of the Lion Oil Refining Company, El Dorado, Arkansas, at a session of the national councillors. The measure was attacked and defended by George A. Hill, Jr., president of the Houston Oil Company, Houston, Texas, and Dr. Ralph J. Watkins, economic adviser to the National Resources Planning Board, respectively, at a round-table discussion on the relation of government to natural resources May 1.

Discussing the situation in the southwest during a symposium on business conditions throughout the country, Barton declared his section of the country is attempting to achieve a balanced economy and a diversification of industries, but finds itself hampered by heavy taxes and New Deal theories.

Citing the great and steady expansion of the oil industry as an example of the recovery efforts of the area, he told the councillors that "the progress of the petroleum industry, and its services to its consumers, might go forward at a much more rapid pace were the industry not impeded by a tax burden of such magnitude as to justify thorough examination by every employee and stockholder in the industry, every consumer of its products, and everyone interested in the general business health of the industry and the many allied concerns which its operations virtually support."

The total tax bill of the industry and its products in 1939 was approximately $1,300,000,000, or some $100,000,000 more than the total value of all the crude oil produced in the United States during the year, and represented more than 10 percent of all taxes collected by the federal, state and local governments combined, he asserted.

On top of this bill, only slightly less than the wage disbursements of $1,500,000,000 which the industry made in 1939, he continued, efforts are being made to place the regulation of oil production in the hands and under the supervision of a federal administrative officer, "denoting the trend of thought of some who would eliminate the supposed inalienable rights of state government."

"We who live in the south-southwest are still old-fashioned enough to believe in states' rights," Barton asserted. "We still believe they are vitally necessary to the continued growth of this nation.

"The welfare of any union of states rests upon the sacredness of those states' rights. Don't misunderstand—states' rights also carry with them responsibility and obligations which must not be disregarded, and will not be.

"But if you will turn back the pages of history you will find that this union of states was not made great by centralization of too much authority over its affairs in any one place. We cannot give too much thought to this. Our nation today is a changing nation, but in it certain tested, fundamental laws of government must remain unchanged if we are to continue to progress as the shrewd forefathers, who welded this union of states, planned we should."

Opening the discussion of federal control at the round-table meeting, Hill asserted the right of the states to control and prevent waste, many times challenged in the courts, never has been questioned by the United States Supreme Court.

Under the understanding control of the states, he declared, the oil industry has made a record of achievement unsurpassed in any other line of endeavor, working steadily to get the ultimate usable fraction out of every drop of oil, to reduce waste and loss and to find additional sources of supply.

An abstract of Hill's address appears on page 11 of this issue.

Watkins Defends Waste Control

Defending strongly the principle of control of waste set forth in the Energy Resources Committee's report, Watkins steered clear of any discussion of the Cole bill and made it clear at the outset that he was appearing in his personal capacity, rather than as a representative of the National Resources Planning Board.

"It is not my purpose to build a case for federal regulation in all cases, or for exclusive federal regulation in any case," he explained. "I do contend that the federal government, as the only agency representative of all of us, must assure itself that the objective of conservation of these energy resources is being attained; and I contend further that parts of that task can be accomplished only by that agency of government which has jurisdiction over our entire domain, i.e., the federal government. To make these contentions is not to say that these industries themselves do not have vital roles to play in the fight for conservation, and not to say that the governments of the producing states do not have vital roles to play."

Explaining the position taken by the board in its report, Watkins pointed out that only the federal government can place restrictions on the importation of foreign oil, can prevent the interstate shipment of hot oil, or validate an interstate contract.

"I gather from recent discussions of the problem of conservation of oil in the trade journals over the past year and from the statements of state officials and executives in the industry that these manifestations of national authority are generally approved," he said. "I must at the same time confess that, in much of this more heated discussion of a proposed extension of federal legislation, I have been just a little puzzled to know whether what I was listening to or reading was the statement of the case for philosophical anarchy, the advocacy of a boycott of government, the plea for a return to the Articles of Confederation, or the belated discovery of the high merit of the governmental principles embodied in the Constitution of the Confederate States of America. * * * At any rate, I feel an obligation to note the recommendations advanced by the Energy Resources Committee in its report to the National Resources Committee.

Public Interest

"It was noted that the interest of the public in petroleum revolves around the central problem of maintaining an adequate supply at a reasonable price as long as possible. The committee's recomendations with respect to petroleum were made in accordance with that public interest. Thus, the committee recommended that the federal government should cooperate with the oil producing states and the petroleum industry in the establishment of minimum standards for production designed to prevent waste and secure wise use of this unique resource.

"It was reiterated that the purpose of such standards should be to secure the benefits of a continuous stream of reasonably priced liquid fuel for as long a period as possible for the national defense, for the people as a whole, and for all the states, both oil-producing and non-oil-producing. The committee felt that the change from the present system does not need to be drastic, although more uniformity and better coordination are imperative. It was recognized also that the development of minimum standards for the production of oil and gas designed to further the wise use of these resources is a complex problem, and that it would be a time-consuming process which would call for cooperation with state regulatory agencies and with the representatives of the industry."

The problem of waste in the oil industry, Watkins declared, is due largely to "the competitive struggle of diverse ownership and operating interests to drain off a fugitive resource subject to the rule of capture.

Natural Gas Men Meet in Houston This Week

A WELL-BALANCED program covering general topics, production, transmission, distribution and sales problems will feature the thirty-fifth annual meeting of the Natural Gas Section of the American Gas Association, to be held in Houston May 6 to 10. For the first time the annual Distribution Conference will be held jointly with the Natural Gas Section meeting.

Elmer F. Schmidt, chairman of the Natural Gas Section and operating manager of Lone Star Gas Company, Dallas, will preside over the first general session on Tuesday, May 7. H. D. Hancock, chairman of the general program committee, vice chairman of the Natural Gas Section, and president of Gas Advisers, Inc., New York, will be the presiding officers at the second general session, to be held Wednesday morning.

These general sessions cover a wide range of subjects and include top executives of the gas industry. The first meeting is opened by an address by Chairman Schmidt, which will be on the subject of "The Status, the Trends, the Future of the Natural Gas Industry." This is followed by "The Natural Gas Industry—100 Years of Progress" to be presented by Walter C. Beckjord, president of the American Gas Association and executive vice president of Columbia Gas & Electric Corporation. Other subjects on the opening program include summer air conditioning sales, advertising and publicity, and federal power commission procedure.

Major Alexander Forward, managing director of American Gas Association, opens the second general session, which will deal largely with the subject of research. Howell C. Cooper of Hope Natural Gas Company and chairman of the main technical and research committee of the Natural Gas Section will discuss the work of his group. Herbert W. Graham, director of metallurgy and research for Jones & Laughlin Steel Corporation, Pittsburgh, will speak on the contributions of steel to natural gas, and Frank C. Smith, president of Houston Natural Gas Company, will discuss research problems confronting the industry.

Other general session speakers will be D. W. Harris, vice president and general manager of Arkansas Natural Gas Corporation, Henry O. Loebell, vice president of Combustion Utilities Corporation; W. M. Deaton and E. M. Frost, of the United States Bureau of Mines; Raymond Hadley, Susquehanna Pipe Line Company; W. R. Wood, Girdler Corporation; R. J. Kuhn, consulting engineer; Dr. Scott Ewing, National Bureau of Standards, and others. They will discuss subjects ranging from field operating problems to distribution and sales.

E. F. SCHMIDT
Chairman of the Natural Gas Section of the American Gas Association

WALTER C. BECKJORD
President of American Gas Association

The production sessions will be featured by a symposium on "The Underground Storage of Gas" to be presented by executives and geologists from various sections of the country. The second session on Monday afternoon will offer a symposium on "Drilling Beyond the First Mile with Both Rotary and Standard Tools." Production session speakers will include: Carl U. Daniels, vice president, Oklahoma Natural Gas Company; Fenton Finn, geologist, The Peoples Natural Gas Company; Porter D. Mellon, general superintendent and chief engineer, Canadian Western Natural Gas, Light & Power Company; J. H. Newlon, geologist and superintendent of production, Equitable Gas Company; S. A. Chadwell, Ohio Fuel Gas Company; C. K. Eilerts, United States Bureau of Mines; C. E. Reistle, Humble Oil & Refining Company; and H. A. Wallace, Jr., United Fuel Gas Company.

Transmission discussions will cover such topics as cathodic protection, coatings, flow efficiency, radio communications, cleaning, emergency repairs, gas engines, welding, costs, operations and maintenance. Speakers will be: F. A. Hough, Southern Counties Gas Company; W. W. Colley, Industrial Engineering Company; Ray A. Ransom, Panhandle Eastern Pipe Line Company; W. T. Bulla, Natural Gas Pipeline Company of America; C. H. M. Burnham, Panhandle Eastern Pipe Line Company; B. L. Rogers and O. H. Moore, Lone Star Gas Company; H. J. Carson, Northern Natural Gas Company; J. H. Lang, The Ohio Fuel Gas Company; C. B. Abbott and W. R. Beardsley, Colorado Interstate Pipe Line Company.

Shell Oil Company plans 85-mile gasoline line

Shell Oil Company is accepting bids this week for an 85-mile 6-inch gasoline pipe line to link its marine terminal at Fall River, Massachusetts, to marketing areas in and west of the Boston area. Work will start in early May, with completion in 90 days. It will have a capacity of 10,000 barrels daily, and plans include a pumping station at Fall River.

The line will run north to Sherborn, where it will fork. One branch will run northeast to Waltham, just west of Boston, and the other northwest to West Boylston. It will make possible movement of gasoline, kerosene and fuel oil from Fall River to a congested area for further distribution by tank truck. The Fall River terminal is supplied by tanker from the company's refineries at Houston and Norco, Louisiana.

H. C. COOPER
Hope Natural Gas Company, Pittsburgh.

FRANK C. SMITH
President, Houston Natural Gas Company, Houston.

J. FRENCH ROBINSON
President, The Peoples Natural Gas Company, Pittsburgh.

D. W. HARRIS
Vice president and general manager, Arkansas Natural Gas Corporation, Shreveport.

These men among those prominent on American Gas Association Natural Gas Section Program at Houston

J. H. NEWLON
Geologist and superintendent of production, Equitable Gas Company, Pittsburgh.

C. E. REISTLE
Chief petroleum engineer, Humble Oil & Refining Co., Houston.

W. L. CHILDS
Vice president and general manager, Reed Roller Bit Company, Houston.

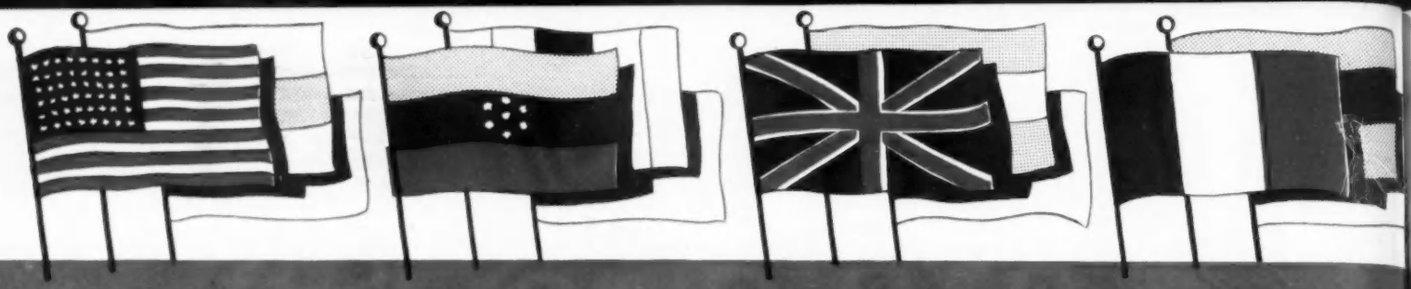
HERBERT W. GRAHAM
Director of metallurgy and research, Jones & Laughlin Steel Corporation, Pittsburgh.

W. R. WOOD
The Girdler Corporation, Louisville, Ky.

ALEX. FORWARD
Managing director, American Gas Association, New York.

H. D. HANCOCK
President, Gas Advisers, Inc., New York.

E. H. POE
Secretary, Natural Gas Section, American Gas Association, New York.



NOMADS call world conclave at Big OIL SHOW in TULSA

INTERNATIONAL DELEGATES TO BE GUESTS OF NATIONAL OIL-EQUIPMENT MANUFACTURERS AND DELEGATES SOCIETY (Nomads)

New Permanent Home of International Delegates and Nomads

Nomads Break Ground for New Home

International Delegates to the "World's Fair of the Oil Industry" to be held in Tulsa, U.S.A., May 18-25, 1940, will be the special guests of the Nomads, members of the National Oil-Equipment Manufacturers and Delegates Society who have had foreign service in the oil industry. The members of the Houston, Los Angeles and Tulsa chapters have joined hands with the Exposition management to provide many special attractions and accommodations for all overseas visitors.

SPECIAL FEATURES FOR INTERNATIONAL DELEGATES

- NEW CLUB BUILDING — The new International Delegates Building and Nomads Club headquarters will be completed for Oil Show.
- SPECIAL TOURS — Personally conducted trips to Oil Fields and Refineries.
- INTERNATIONAL BANQUET — An Elaborate Fellowship Dinner is being arranged.
- FREE AUTO TRANSPORTATION — Special automobile service to Show Grounds and Points of Interest in Tulsa.
- HOUSING RESERVATIONS — Secured Through Housing Committee in Advance; or at Headquarters During Exposition.

Write WM. B. WAY, General Mgr., For Information

TULSA
MAY
18—25

INTERNATIONAL PETROLEUM EXPOSITION

MEN IN THE INDUSTRY'S NEWS

B. A. HARDEY, a vice president of the Independent Petroleum Association of America, has been officially designated by Governor-elect Sam H. Jones as Louisiana Conservation Commissioner, succeeding E. S. Clements, appointee of retiring Governor Earl Long. Clements succeeded William G. Rankin as commissioner in 1939, when Rankin, now serving a term in federal prison was indicted Hardey, 46 years old and a resident of Shreveport, was a Jones campaign aide. An independent operator, he was for a number of years scout in the Shreveport territory for Gulf Refining Company. He is a native of Evangeline Parish, Louisiana, and a University of Texas Graduate.

SEVERAL EXECUTIVES in the production department of The Texas Company are in South America, visiting properties in which the company is interested in Venezuela and Columbia. The party, which arrived in Maracaibo May 1, includes Lee Barrows, manager of the production department, Houston; F. G. Sealey, in charge of the foreign department, New York; James Birmingham, Gulf Coast division manager, Houston; R. C. Stewart, Louisiana division manager, Shreveport, and A. R. Wilson, assistant to Barrows, Houston.

VERNER A. GILLIS has been appointed chief geologist for Northern Pacific Railway Company, replacing E. H. MacDonald, who has retired after 32 years of Service. Karl A. E. Berg has been appointed assistant chief geologist to fill the vacancy created by promotion of Gillis.

HARRY H. MACK, vice president in charge of production for Sunray Oil Company, Tulsa, and Miss Kathryn Malcolm, Tulsa, were married in the home of the bride's cousin, Dr. and Mrs. M. E. Phelps, at El Reno, Oklahoma, on April 20. After a short trip to Santa Fe, New Mexico, they will be at home in Tulsa.

DR. CHARLES N. GOULD, Oklahoma City, was principal speaker at the annual spring banquet of Sigma Gamma Epsilon, geological fraternity at the University of Oklahoma, May 1. He spoke on "Early Geologists in Oklahoma," illustrating his lecture with pictures and slides.

JAMES N. HOCKMAN is geologist in charge of Kingwood Oil Company's new district office at Jackson, Mississippi. Others connected with the office are L. M. McLemore, field geologist, and Richard R. Priddy, geologist.

JOHN M. MOUSER, land man for Midstates Oil Corporation with headquarters at Houston, visited San Angelo and other points in West Texas early last week.

J. ELMER THOMAS, petroleum analyst, is opening an office in association with Ralph E. Davies, Inc., consulting engineers, in Suite 804, 150 Broadway, New York. His Houston office has been moved from 1010 Electric Building to 1434 Commerce Building. In his work with Ralph E. Davies, Inc. He will devote his time principally to industrial reports and economic surveys.

CHARLES KIMBALL, formerly stationed at Baton Rogue, has been transferred to Jackson, Mississippi, by Exchange Oil Company to succeed Thad K. Wynn, who resigned from the company's scouting department to enter business for himself at Jackson.

JOHN A. BROWN, president of Socony-Vacuum Oil Company, told stockholders in his annual report last week that the company experienced "almost no physical confiscation of property during 1939, and there has been no confiscation except in that part of Poland seized by Russia where the value involved is relatively small."

J. C. CRAIN, part owner and superintendent of Two-States Drilling Company and superintendent of South States Drilling Company, has transferred from Hobbs, New Mexico, to Houston to supervise operations in the southern division.

O. M. MASON, president of Mason Oil & Gas Company, New York, recently was in West Texas on an inspection tour of company properties.

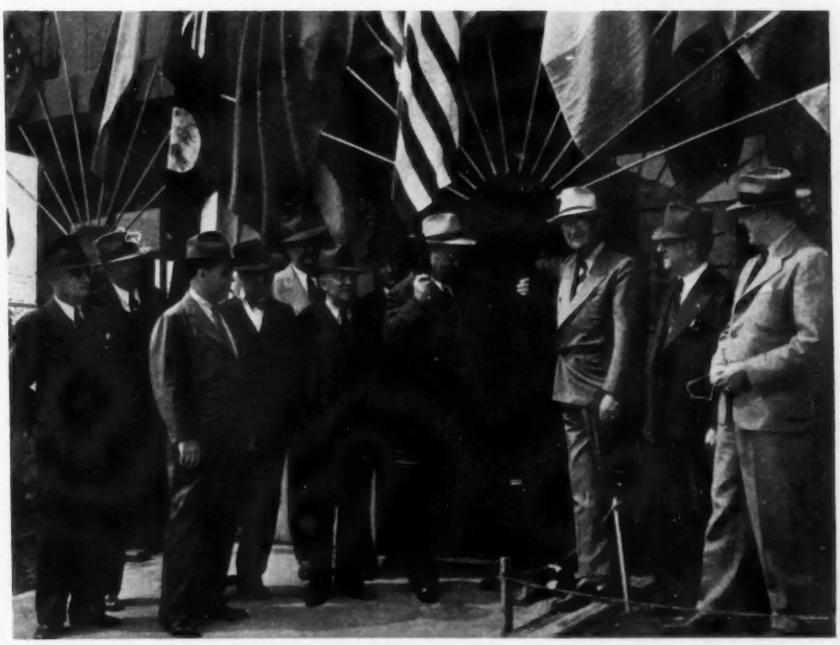
O. R. BURDEN, former Wichita Falls division pipe line superintendent for The Texas Pipe Line Company, has entered the services of the Panhandle Refining Company, oldest reefining concern in North Texas. He was elected a member of the board and is assistant to Roy B. Jones, president.

LEE R. SLATER, formerly with Independent Oil & Gas Company and later associated with Darby Petroleum Corporation, has joined Anderson-Prichard Oil Corporation in the West Texas-New Mexico district.

WM. WARREN LATIMER, chief clerk for The Carter Oil Company at Tulsa, has been transferred to the Eastern Division at Mattoon. He will be replaced by W. E. Griffin, who is transferring from Mattoon.

HAROLD M. SMITH, United States Bureau of Mines, Bartlesville, will speak May 6 before the Tulsa Geological Society on "Utilization of Natural Gas in the Production of Chemical Products."

PAUL H. PRICE, West Virginia state geologist, discussed "The Future of Natural Gas Fuels in West Virginia" before a joint meeting of the Appalachian Geological Society, the Clarksburg Oil & Gas Men's Club, and the Oil and Gas Section of the Engineers' Society of



The new International Delegates Building on the grounds of the International Petroleum Exposition was dedicated last week with members of the exposition's board of directors and of the Tulsa Chapter of Nomads in attendance. Shown in the picture, with flags of oil-producing nations in the background, are, left to right: W. D. Teubner, General Paint Company; C. O. Willson, editor, Oil and Gas Journal; L. S. Reagan, Webster Engineering Company; A. J. Kerr, Pittsburgh Equitable Meter Company; Shep Miers, Kerotest Manufacturing Company; Frank J. Hinderliter, exposition vice president; H. M. Cosgrove, secretary of the Tulsa Nomads; Fred E. Cooper, president of the Tulsa Nomads; Clyde Pape, exposition treasurer; J. Burr Gibbons, exposition director, and William B. Way, exposition general manager.

Western Pennsylvania, at Charleston, West Virginia, last week. Clifford Hodges, Halliburton Oil Well Cementing Company, spoke on "New Developments in Drilling Technology."

DEWEY JORDAN, West Texas-New Mexico production superintendent for Atlantic Refining Company, has arranged to change staff headquarters from Wink to Odessa, Texas, where the company will erect a modern camp, office building and warehouse.

FRANK G. EVANS, Shell Oil Company, discussed "The Photographic Interpretation of Part of the Texas Gulf Coast" before the Houston Geological Society last week.

KENNETH ELLISON, consulting geologist, addressed the Oklahoma City Geological Society April 29 on Ramsey Petroleum Company's deep test in Canadian County, Western Oklahoma.

JACK PERKINS, geological department of Amerada Petroleum Corporation, has been transferred from Oklahoma City to Tulsa.

J. D. McCAMEY, director of safety for the Carter Oil Company, addressed the Tulsa Engineers Club April 29 on "Engineering in Its Reference to Industrial Safety."

FRANK SHAFFER, with The Texas Company's geophysical division in Illinois, has been transferred to Houston as engineer.

J. M. YOUNG, manager at Goose Creek, Texas, for Gulf Cities Natural Gas Company, has been named Houston division superintendent for the company.

V. J. HEDRICKSON, geologist for Continental Oil Company, has been transferred from Lance Creek, Wyoming, to Denver.

M. T. HALBOUTY, Houston, discussed electrical logging before the Petroleum Engineering Club of A. & M. College of Texas April 23.

GLENN BISH, district superintendent of The Ohio Oil Company at Hobbs, New Mexico, has been transferred to Houston as division superintendent.

BRUCE K. BROWN, general manager of research and development for Standard Oil Company (Indiana), has been elected a director.

J. EDGAR PEW, vice president of Sun Oil Company, visited Houston last week on an inspection tour of company properties.

SIMON HARRIS, superintendent at Amarillo for Stanolind Oil & Gas Company, has been transferred to Fort Worth.

ROY S. RANDERSON, Rancon Oil Company, has moved his office from San Antonio to Houston.

Texas state-wide hearing set for May 20 at Austin

The Texas Railroad Commission has set its next statewide proration hearing for May 20, at Austin.

California new Central Committee meets May 8

The organization meeting of the newly elected Central Committee of California Oil Producers will be held May 8. The committee is composed of 29 elected operators chosen to represent individual fields and producing districts by popular vote of producers in each sub-division, and 4 members chosen by the committee from the state-at-large at the organization meeting.

Under California's voluntary proration system, each producer is entitled to one vote in each field or district in which he has producing properties. The election takes the form of selection of a field committee with indicated preference for chairman and vice chairman. The chairman so chosen becomes the field or district member of the committee, and the vice chairman the alternate member.

Election results were audited by a special election committee, and selection of the following field and district members and alternates was announced:

Belridge-Lost Hills, R. A. Sperry, General Petroleum Corporation, member, and C. E. Coleston, Belridge Oil Company, alternate; Buena Vista-Elk Hills, H. S. Stark, Honolulu Oil Corporation, and R. L. Keyes, The Texas Company; Coles Levee-Canal-Paloma-Strand-Richfield Western-Ten Sections, R. D. Montgomery, Richfield Oil Corporation, and Fred E. Smith, The Ohio Oil Company; Coalinga, W. S. Fisher, Mercantile Crude Oil Company, and Frank Wells, M. H. Whittier Company; Coalinga-New, R. S. Lytle and E. H. McCullough, Amerada Petroleum Corporation; Kettleman Hills, J. H. Sargent, Kettleman North Dome Association, and R. I. Brown, Standard Oil Company of California.

Mount Poso-Round Mountain-Coffee Canyon, R. N. McMaster, C. C. M. O. Oil Company, and D. L. Caldwell, Barnsdall Oil Company; Poso Creek-Fruitvale-Kern Front-Kern River, Lloyd Williamson, California Starr Oil Company, and J. L. Bowen, Western Gulf Oil Company; Wheeler Ridge-Edison-Mountain View-Arvin-Grapevine, Ross McCollum, National Oil Company, and Harry Campbell, Jergins Oil Company, Midway-Lake View-Maricopa-McKittrick, H. F. Owen, The Berry Company, and A. J. Crites, Anchor Oil Company; Santa Marie Valley, William H. Morgan, R. R. Bush Oil Company, and Warren Smith, with R. S. Lytle; Gato Ridge-Cat Canyon-Lompoc-Casmalia-Orcutt-Los Flores, W. H. Geis, Union Oil Company, and O. C. Field, O. C. Field Gasoline Corporation; Aliso Canyon-Capitan-Newhall-Potrero-Elwood-Padre Canyon-Rincon-San Miguelito, L. L. Aubert, Bankline Oil Company, and R. R. Boyd, Richfield Oil Corporation.

Ventura Avenue, Joseph Jensen, Tide Water Associated Oil Company, and William L. Hobro, Shell Oil Company; Santa Barbara-Summerland-Conejo-Oxnard-Sargent-Half Moon Bay-Santa Paula-Newhall, S. P. Mullen, Merchants Petroleum Company, and A. A. Anderson, Bolsa Chica Oil Corporation; Alamitos Heights-Seal Beach, A. H. Bell, Continental Oil Company, and Warren Craddock, Pacific Western Oil Corporation; Brea-Olinda-Richfield-Chino-Karmer-Coyote-Puente-Yorba Linda, Lawrence Vander Leck, Fullerton Oil Company; Dominguez, Harold Wyatt, Shell Oil Company, E. D. Hardison, Union Oil Company; Playa del Rey-Potrero-El Segundo-Los Angeles-Lawndale, Laurence C. Kelly, Thomas Kelly & Sons, and C. C. Spicer, Republic Petroleum Company.

Huntington Beach, M. A. Machris, Wilshire Oil Company, and A. M. Anderson, Holly Development Company; Inglewood, Warner Clark, Standard Oil Company of California, and Quay S. Diven, Tide Water Associated Oil Company; Long Beach, Wilbur Harrison, Apex Petroleum Corporation, and Neil Elder, Morton & Elder; Montebello-Whittier, F. M. Ziegler, Kern Oil Company, and R. H. Garrison; Rosecrans-Athens, W. C. Whaley, Barnsdall Oil Company, and L. R. Rogers, The Superior Oil Company.

Santa Fe Springs, V. H. Wilhelm, The Texas Company, and Henry Power, General Petroleum Corporation; Torrance-Hermosa, E. Robert Burns, MacDonald & Burns, and Neal H. Anderson; Wilmington-Long Beach, C. G. Williams, Long Beach Harbor Oil Company, and Allan A. Jergins Oil Company; Wilmington (Town Lot Area), George Ring, Ring Oil Company, and W. H. Eastham, Royalty Service Corporation; Greeley-Rio Bravo-Wasco, William Keck, Jr., The Superior Oil Company, and R. W. French, Continental Oil Company.

Electrical Association extends scope; names Summers head

Enlargement of the scope of activities of the Petroleum Industry Electrical Association to include memberships from the producing and refining branches was approved at the thirteenth annual convention held May 1-3 at Dallas. The organization has experienced a steady growth while devoting its efforts primarily to telephone and telegraph communication systems and the application of electric power in the operation of crude, gasoline and natural gas pipe lines. Electrical engineers who specialize in production and refinery operations will be accepted under memberships carried by affiliated transportation units.

O. V. Summers, Houston, telephone and telegraph superintendent of The Texas Pipe Line Company, was elected president; C. O. Diller, Dallas, Lone Star Gas Company superintendent, was chosen vice president, while J. E. Collerain, Houston, superintendent of Houston Pipe Line Company, was re-elected secretary-treasurer.

Technical talks were made at the business session by C. F. Folliott, Associated Electric Laboratories, Chicago; Laurence A. Hawkins, General Electric Company, Schenectady, New York; G. M. Kintz, United States Bureau of Mines, Dallas; and Gordon N. Scott, pipe line technologist, Los Angeles.

The Petroleum Electric Supply Association sponsored 47 exhibits at the convention, and also held its annual meeting. New Officers are: J. H. Jamison, Dallas, Square D Company, president; George Brundrett, Dallas, Hubbard & Company, vice president; and Claude Heyser, Dallas, Anaconda Wire & Cable Company, secretary-treasurer.

Industry is maintaining high rates of operation

The latest statistics of the industry, covering the week ended April 27, were featured by a continuation of crude oil production at a high level, a further increase in crude stocks, an increase in crude runs to stills, a small reduction of gasoline stocks from their recent all-time peak, a moderate addition of light fuel oils to storage, and a withdrawal of heavy oil from storage.

United States crude oil production averaged 3,845,250 barrels daily, 13,300 less than in the previous week but 345,000 barrels a day more than the indicated average daily market demand for April. The output was nearly 8 percent greater than that in the corresponding week last year.

Crude runs to stills were increased from 3,535,000 to 3,555,000 barrels daily in the week ended April 27, and were over 7 percent higher than in the corresponding week last year.

Production of gasoline was reduced to 11,276,000 barrels for the week, which was 136,000 barrels less than the amount turned out in the preceding week.

Stocks of gasoline came down 365,000 barrels from the record amount of 102-817,000 barrels held on April 20, having totaled 102,452,000 barrels at the end of the new week. The latter quantity was 17.1 percent greater than that held a year previously, and embodied probably 15,000,000 barrels of surplus above needed working stocks.

The inventory of gas oil and distillate fuel continued to increase seasonally, having risen 218,000 barrels to 24,997,000 barrels. That amount was 5.6 percent less than that held a year before, whereas demand is up materially.

Stocks of residual fuel oil, used as fuel by industry, were reduced 771,000 barrels, as demand was comparatively good. The total of 102,552,000 barrels was 6.1 percent smaller than that of 109,233,000 barrels held a year previously. Demand for these heavy oils also has been larger this year than last year.

Stocks of crude oil rose from 252,269,000 to 254,881,000 barrels in the week ended April 20, according to the Bureau of Mines.

Kerosene demand is good; gasoline market unsteady

The past week brought extension of previously established trends in the oil industry's markets. Gasoline continued to be offered at low prices, and there was a tendency toward further lowering of quotations, particularly on the East Coast.

The persistent sluggishness of the gasoline market doubtless reflects the exceptionally large stocks of that product, which are still near the lately established all-time peak.

The inactivity of the gasoline trade also is partly due to unseasonal weather, which has retarded improvement of demand.

During the past week there was some further decline in wholesale prices of gasoline. Top quotations were down from ⅛ to ¼ cent a gallon at some points on the Atlantic seaboard. Similarly, some Mid-Continent refiners lowered maximum quotations ⅛ to ¼ cent a gallon, particularly on lower octane gasolines.

The kerosene market, in contrast with the gasoline market, has been comparatively strong. Demand for that product has been good in the Middle West, as it has been anticipated that farmers would require relatively large supplies of kerosene and tractor fuel in the weeks ahead for their spring plowing. Adverse weather conditions have continued until farmers are several weeks behind with their work in some instances. Because of this situation, together with the fact kerosene stocks are moderate, supplies have become difficult to obtain; and aside from the buying of distributors, there is considerable inter-refinery buying by plant owners that need added supplies to supplement their own production in fulfilling contract obligations.

The markets for lubricants, which have grown progressively weaker in recent weeks, continued unsteady during the past 10 days. In Western Pennsylvania, both bright stocks and neutral oils were being offered last week for 1 cent a gallon less than previously. There has been very little export demand for several weeks, although a few inquiries have entered the market. Some indication of improvement in domestic demand also has been noted.

PRODUCT PRICES

***REFINED GASOLINE**

	Range Last Week (Cents a gal.)		Changes from Week Before	
Oklahoma Refineries:				
60 Octane and under	4	4	...	—¼
63-66 Octane	4¼	4¾	...	...
72-74 Octane	4¾	5¼	...	...
Mid-Western Tank Car:				
60 Octane and under	4	4¼	...	...
63-66 Octane	4⅜	4¾	...	...
72-74 Octane	4¾	5¼	...	...
New York Harbor:				
70 Octane and under	6¼	6½	...	—⅛
72-74 Octane	6¼	7¼	...	...
NATURAL GASOLINE				
Grade 26-70:				
F.O.B. Group 3	1½	1½	...	...
F.O.B. Breckenridge, Texas	1¼	1¼	...	...
KEROSENE				
Oklahoma Refineries:				
41-43 water white	4	4¼	...	...
42-44 water white	4⅛	4⅝	...	...
Mid-Western Tank Car:				
41-43 water white	4	4¼	...	...
42-44 water white	4⅛	4⅝	...	...
New York Harbor:	6	6	...	...
RANGE OIL				
At Oklahoma Refineries	3⅝	3⅞	...	...
In Mid-Western Market, Group 3 basis	3¾	3⅞	...	...
LIGHT FUEL OILS				
Oklahoma Refineries:				
No. 1 straw	3⅜	3⅝	...	...
No. 3	3¼	3⅜	...	...
Mid-Western Tank Car:				
No. 1 straw	3½	3⅝	...	...
No. 3	3⅛	3⅜	—⅛	...
New York Harbor:				
No. 1	6	6	...	...
No. 3	5½	5½	...	...
HEAVY FUEL OILS (Per Barrel)				
Oklahoma Refineries:				
No. 6	50	55	...	+5
Mid-Western Tank Car:				
No. 5	75	75	...	...
No. 6	45	55	...	...
New York Harbor:				
No. 5	$1.70	$1.85	...	...
No. 6	1.50	1.50	...	...
BUNKER C FUEL OIL (Per barrel, ships bunkers)				
Gulf Coast	$ .90	$ .90	...	—.10
New York Harbor	1.50	1.50	...	...
DIESEL OIL (Per barrel, ships bunkers)				
Gulf Coast	$1.70	$1.70	...	...
New York Harbor	2.20	2.35	...	...
Los Angeles Basin, 27 gravity	1.05	1.40	...	...
LUBRICATING OIL				
Oklahoma Refineries:				
Bright stock, 150-160 viscosity at 210°, 10-25 pour test	20	24½	...	...
Neutral oil, pale, No. 3 color, 150 viscosity at 100°, 0-10 pour test	10½	13¾	...	...
Western Pennsylvania:				
Bright stock, 145-155 viscosity, at 210°, 25 pour test	22	23	...	...
Neutral oil, No. 3 color, 150 viscosity, at 70°, 25 pour test	22	23	...	...

*Prices shown are those quoted on ASTM octane test basis; being generally around ¼ cent a gallon higher than quotations for corresponding octane numbers on discarded L-3 octane test method, as newly adopted standards are more difficult to meet, by several octane numbers.

Gulf boosting purchases in West Texas and New Mexico

Gulf Refining Company is stepping up purchases of crude in West Texas and Southeastern New Mexico through the absorption of well connections surrendered by other buyers.

The company has arranged to relieve Shell Pipe Line Corporation of 6500 barrels daily runs from the Goldsmith field, West Texas, with either party privileged to terminate the deal on short notice. In the Monument field, New Mexico, Sinclair Prairie Oil Marketing Company has diverted about 1300 barrels of production purchased from Repollo Oil Company, an affiliated unit, to Gulf Refining Company. Sinclair Prairie Oil Marketing Company has eased up on its restricted crude buying schedule put into effect April 1 in New Mexico as result of well connection shifts.

Production pulled down by large Texas decline

Production of crude oil, which has been excessive for several months, was brought down sharply in the past week, ended May 4, as stricter allowables went into effect May 1 in prorated states.

Output of all the wells in the United States averaged 3,682,975 barrels daily for the week, which was 177,950 barrels a day less than in the previous week.

The new production rate was within about 83,000 barrels of the 3,601,000-barrel indicated market demand for domestic crude, as estimated for May by the Bureau of Mines. However, the output in the first three days of the week occurred in April, and the daily average for the week was a little over 180,000 barrels in excess of the estimated market demand of 3,500,600 barrels a day on the average for April.

Responsible more than any other state for the large decrease of the nation's production in the week of May 4 was Texas, where output dropped 151,950 barrels, to an average of 1,367,800 barrels daily, as all fields of the

Trends of United States Production and Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
1937:						
August 28	[1]3,731,450	3,425,000	309,506,000	66,997,000	112,111,000	
September 25	3,666,300	[2]3,455,000	307,974,000	65,620,000	116,472,000	
1938:						
March 19	3,433,550	3,080,000	306,380,000	[3]93,192,000	122,067,000	
November 12	3,243,250	3,180,000	273,394,000	[6]67,551,000	34,175,000	120,491,000
December 10	3,245,100	3,150,000	[6]269,509,000	68,687,000	32,068,000	118,711,000
December 31	3,201,450	3,115,000	273,024,000	71,695,000	29,082,000	115,741,000
1939:						
January 28	3,248,250	3,235,000	271,763,000	77,279,000	26,583,000	112,766,000
February 25	3,328,850	3,185,000	271,758,000	84,597,000	23,419,000	110,252,000
March 25	3,382,350	3,225,000	273,915,000	87,561,000	21,487,000	107,551,000
April 22	3,526,700	3,280,000	277,156,000	[2]87,769,000	21,085,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	[7]25,844,000	[7]108,409,000
May 6	3,580,900	3,275,000	[2]278,607,000	86,216,000	26,167,000	108,597,000
May 27	3,585,250	3,405,000	278,289,000	84,152,000	26,992,000	109,386,000
June 24	3,452,800	3,430,000	272,297,000	81,733,000	30,239,000	111,726,000
July 29	3,539,100	3,460,000	268,513,000	77,887,000	34,900,000	114,053,000
August 5	[1]3,909,400	3,445,000	268,982,000	76,431,000	35,601,000	114,512,000
August 26	[1]1,690,800	3,475,000	246,982,000	73,475,000	37,722,000	116,237,000
September 30	3,658,200	3,560,000	233,023,000	71,168,000	38,081,000	115,466,000
October 7	3,435,850	3,505,000	231,564,000	[6]71,152,000	38,549,000	114,397,000
October 21	3,771,550	[1]3,650,000	[3]229,127,000	72,122,000	39,358,000	115,060,000
October 28	3,498,500	3,520,000	230,453,000	72,660,000	39,562,000	114,786,000
November 25	3,818,100	3,510,000	231,811,000	75,595,000	38,527,000	112,106,000
December 30	3,545,000	3,445,000	237,742,000	80,985,000	34,184,000	106,680,000
1940:						
January 27	3,611,600	3,470,000	237,339,000	87,914,000	27,407,000	103,015,000
February 3	3,498,800	3,395,000	239,380,000	89,337,000	26,861,000	102,536,000
February 24	3,732,100	3,490,000	240,836,000	96,719,000	25,390,000	103,419,000
March 30	3,841,250	3,585,000	250,561,000	101,370,000	23,778,000	105,081,000
April 6	3,745,000	3,455,000	251,897,000	101,945,000	23,551,000	103,299,000
April 13	3,853,800	3,570,000	252,269,000	101,837,000	24,237,000	102,595,000
April 20	3,858,550	3,535,000	254,881,000	[1]102,817,000	24,779,000	103,323,000
April 27, 1940	3,845,250	3,555,000	.....	102,452,000	24,997,000	102,552,000
April 29, 1939	3,568,200	3,310,000	[4]277,156,000	87,490,000	26,414,000	109,233,000
Change in past year	+7.7%	+7.4%	—8.0%	+17.1%	—5.6%	—6.1%

[1] All time peak. [2] Peak for 1939. [3] Lowest since April, 1922. [4] Stocks, April 22, 1939. [5] Peak prior to 1939. [6] Lowest for year. [7] Prior to April 29, 1939, data did not include stocks at terminals, in transit, etc., except in California. [8] April, 1939, daily average. [9] Lowest since October, 1922, due to the shutdown of six Mid-Continent States.

state were closed in on the first day of the month and subsequently resumed production under somewhat lower allowables. The new average was only about 24,000 barrels daily more than indicated market demand, and less than the average daily state allowable, because of the general one-day shutdown.

Small decreases occurred also in most other states, including California, Oklahoma, Illinois, Kansas, New Mexico, Michigan, and Arkansas.

Output was up slightly in Louisiana, Mississippi, and Wyoming.

Provide connections for North Texas deep lime areas

Pipe line relief and a market outlet for a score of unconnected wells in the Consolidated, Hull-Silk and K-M-A fields, North Texas deep lime areas, was being provided last week by Sinclair Prairie Oil Marketing Company after revising its buying policy.

The company curtailed purchases, effective April 1, to 75 percent of the allowable, and also discontinued making new connections. Resumption of 100 percent runs was ordered April 27, but in view of the unconnected well situation the company elected 3 days later to continue former restrictions and give aid to the owners of wells without a market outlet.

Riverside hearing

The Texas Railroad Commission has scheduled a hearing for May 13 to consider amending the gas/oil ratio regulations for the Riverside field, San Patricio County.

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (May)	State Allowable in May	BARRELS DAILY FOR WEEK ENDED	
			May 4	April 27
TEXAS—				
Texas Panhandle	.....	.....	77,550	77,800
North Texas	.....	.....	102,600	106,200
West Central Texas	.....	.....	33,050	34,050
West Texas	.....	.....	233,300	282,900
East Central Texas	.....	.....	80,900	88,850
East Texas Field	.....	.....	396,650	396,800
South Texas	.....	.....	214,100	270,150
Texas Gulf Coast	.....	.....	229,650	263,000
Total Texas	**1,344,200**	**1,420,500***	**1,367,800**	**1,519,750**
CALIFORNIA—				
Long Beach	.....	.....	44,900	44,500
Midway-Sunset	.....	.....	49,000	44,100
Kettleman Hills	.....	.....	43,900	45,000
Wilmington	.....	.....	82,500	82,600
Others	.....	.....	365,800	376,600
Total California	**592,600**	**592,000†**	**586,100**	**592,800**
OKLAHOMA—				
Oklahoma City	.....	.....	98,500	95,500
Seminole Area	.....	.....	103,200	101,425
Others	.....	.....	211,275	219,500
Total Oklahoma	**408,100**	**408,100**	**412,975**	**416,425**
ILLINOIS—				
Salem	.....	.....	258,850	260,100
Louden	.....	.....	71,750	73,750
Other New Pools	.....	.....	93,700	94,100
Old Pools	.....	.....	8,600	9,200
Total Illinois	**392,900**	.....	**432,900**	**437,150**

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (May)	State Allowable in May	BARRELS DAILY FOR WEEK ENDED	
			May 4	April 27
LOUISIANA—				
North Louisiana	.....	.....	69,475	69,350
South Louisiana	.....	.....	224,000	221,000
Total Louisiana	**264,500**	**293,080**	**293,475**	**290,350**
KANSAS	**158,100**	**158,100**	**147,650**	**152,600**
NEW MEXICO	**103,900**	**107,000**	**108,600**	**112,200**
EASTERN STATES—				
Pennsylvania Grade	52,100	.....	76,400	76,200
Others, Eastern	49,200	.....	20,200	23,200
Total Eastern States	**101,300**	.....	**96,600**	**99,400**
MOUNTAIN STATES—				
Wyoming	72,900	.....	69,500	68,800
Montana	17,400	.....	17,500	17,500
Colorado	3,500	.....	3,700	3,900
Total Mountain States	**93,800**	.....	**90,700**	**90,200**
MICHIGAN	**63,200**	**58,000**	**59,700**	**62,500**
ARKANSAS	**64,500**	**70,000**	**69,175**	**70,500**
INDIANA	**8,100**	.....	**9,500**	**9,500**
MISSISSIPPI	**5,800**	.....	**7,800**	**7,550**
‡Total 8 Prorated States	**2,999,100**	**3,106,780**	**3,045,475**	**3,217,125**
Total United States	**3,601,000**	.....	**3,682,975**	**3,860,925**

*** Net daily average, considering general shutdown May 1, and 14 shutdown days in East Texas Field.**
† Recommendation of Central Committee of California Oil Producers.
‡ Texas, California, Oklahoma, Louisiana, Kansas, Arkansas, Michigan, New Mexico.

CRUDE OIL PRICE SCHEDULES

MID-CONTINENT GRAVITY SCALE PRICES—Posted October 11-13, 1938

(Some fields of Mid-Continent have flat price postings, and are shown separately)

Gravity	[7]Okla.-Kans.	[10]North La.-Ark.	[9]Schuler, Ark. 9-13-39	North & W. Central Tex.	East Central Tex.	Gray Co. Tex.	Carson, Hutchinson Co. Tex.	[1]Tomball Tex. Type	West Tex.-New Mex.	[2]Gulf Coast (Tex.-La.) 10-2-39	[3]Some La. Gulf Areas 10-2-39	Jennings, La.	[4]Anahuac, Tex. Type 10-2-39	[5]Refugio, Tex. Type 10-2-39	[6]Mirando, Tex. Type 10-2-39	[8]Salt Creek, Wyo. (except Tensleep)
19–19.9	.....	.....	.....	.....	.....	.....	.....	.....	*$0.53	*$0.86	*$0.86	.....	*$0.81	*$0.91	*$0.86	.....
20–20.9	$0.60	.....	.....	.....	.....	.....	.....	.....	.55	.88	.88	.....	.83	.93	.88	$0.70
21–21.9	.63	.....	.....	.....	.....	.....	.....	.....	.57	.90	.90	.....	.85	.95	.90	.72
22–22.9	.66	.....	.....	.....	.....	.....	.....	*$0.95	.59	.92	.92	.....	.87	.97	.92	.74
23–23.9	.69	.....	.....	.....	*$0.78	.....	.....	.97	.61	.94	.94	.....	.89	.99	.94	.76
24–24.9	.72	*$0.73	*$0.63	*$0.71	.80	.....	.....	.99	.63	.96	.96	.....	.91	1.01	.96	.78
25–25.9	.75	.75	.65	.73	.82	.....	.....	1.01	.65	.98	.98	.....	.93	1.03	.98	.80
26–26.9	.78	.77	.67	.75	.84	.....	.....	1.03	.67	1.00	1.00	.....	.95	1.05	1.00	.82
27–27.9	.81	.79	.69	.77	.86	.....	.....	1.05	.69	1.02	1.02	.....	.97	1.07	1.02	.84
28–28.9	.84	.81	.71	.79	.88	*$0.72	*$0.67	1.07	.71	1.04	1.04	.....	.99	1.09	1.04	.86
29–29.9	.87	.83	.73	.81	.90	.74	.69	1.09	.73	1.06	1.06	.....	1.01	1.11	1.06	.88
30–30.9	.90	.85	.75	.83	.92	.76	.71	1.11	.75	1.08	1.08	.....	1.03	1.13	1.08	.90
31–31.9	.92	.87	.77	.85	.94	.78	.73	1.13	.77	1.10	1.10	*$0.87	1.05	1.15	1.10	.92
32–32.9	.94	.89	.79	.87	.96	.80	.75	1.15	.79	1.12	1.12	.89	1.07	1.17	1.12	.94
33–33.9	.96	.91	.81	.89	.98	.82	.77	1.17	.81	1.14	1.14	.91	1.09	1.19	1.14	.96
34–34.9	.98	.93	.83	.91	1.00	.84	.79	1.19	.83	1.16	†1.16	.93	1.11	1.21	1.16	.98
35–35.9	1.00	.95	.85	.93	1.02	.86	.81	1.21	.85	1.18	.....	.95	1.13	1.23	1.18	1.00
36–36.9	1.02	.97	.87	.95	1.04	.88	.83	1.23	.87	1.20	.....	.97	1.15	1.25	1.20	1.02
37–37.9	1.04	.99	.89	.97	1.06	.90	.85	1.25	.89	1.22	.....	.99	1.17	1.27	1.22	1.04
38–38.9	1.06	1.01	.91	.99	1.08	.92	.87	1.27	.91	1.24	.....	1.01	1.19	1.29	1.24	1.06
39–39.9	1.08	1.03	.93	1.01	1.10	.94	.89	1.29	.93	1.26	.....	1.03	1.21	1.31	1.26	1.08
40+	1.10	1.05	.95	1.03	1.12	.96	.91	1.31	.95	1.28	.....	1.05	1.23	1.33	1.28	1.10

* Minimum price and applies also to purchases of lower gravity.

† Maximum price and applies also to purchases of higher gravity.

[1] Tomball, Raccoon Bend (Deep) and Satsuma.

[2] Includes Amelia, Barbers Hill, Big Creek, Blue Ridge, Clear Lake, Cotton Lake, Esperson, Fannett, Goose Creek, Hankamer, Lovells Lake, Lochridge, Moore, Mykawa, Nome, Orange, South Liberty, Spindle Top, Sugar Land, Thompsons, Webster, and West Beaumont.

[3] Includes Berwick Bay, Bay St. Elaine, Caillou Island, Chacahoula, Dog Lake, Edgerly, Four Isle, Gillis, Grand Bay, Hackberry, Horseshoe Bayou, Iberia, Jefferson Island, Lake Barre, Lake Pelto, Leesville, Port Barre, Starks, Timbalier Bay, Quarantine Bay, and Vinton fields.

[4] Anahuac, Dickinson, Gillock, Cedar Point, Fairbanks, Turtle Bay, Hull, Orange, Pierce Junction, Batson, Caplen, Humble, North Dayton, Saratoga, Sour Lake, South Esperson, Spindle Top, West Orange, Thompson (deep), and Raccoon Bend (shallow) fields.

[5] Includes Saxet, E. White Point, Greta, O'Connor-McFadden, Taft, Plymouth and Tom O'Connor fields.

[6] Includes Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields.

[7] Oklahoma Pipe Line and Magnolia schedules.

[8] Includes La Barge, Midway Dome, Dutton.

[9] Also Buckner, Village, Magnolia.

[10] Add 10 cents for Bunkie and Eola field prices.

Mid-Continent Flat Prices

	Flat Price	Date Posted
Arkansas:		
Smackover	$0.73	10–12 38
Louisiana:		
Garden Island	1.24	10–12–38
Gibson	1.04	10–11–38
Lafitte	1.04	10–12–38
Texas:		
Cayuga	.78	10– 2–39
East Texas	1.10	10–12–38
Talco	.65	10– 2–39
Livingston, Cleveland	1.10	10–12–38
Van	.93	10–12–38
Pettus	1.29	10–12–38
Pecos County	.78	10–12–38
Pecos Shallow	.65	10–12–38
Luling	.87	10–12–38
Lytton Springs	.99	10–12–38
Salt Flat, Darst Creek, Hilbig, Carroll, Clark and Zoboroski	.96	10–11–38
Flour Bluff-Jim Wells Co.	1.23	10–11–38
Guerra	1.06½	5– 8–39
Seabreeze, Willow Slough, La Belle, Hardin, S. China	1.10	9–14–39
Clay Creek	.85	10–13–38
Conroe	1.27	10–11–38
Long Lake	1.08	10–19–38

Middle West Prices

Lima, Ohio	$0.90	10–13–38
Illinois, old fields	.95	6– 8–39
Illinois Basin	1.05	6– 8–39
Lake Centralia-Salem, Illinois	1.05	10–21–39
Princeton, Indiana	.95	6– 8–39
Griffin, Sw., Ind.-Se. Ill., Sand	.95	10–10–39
Griffin: McClosky Lime	.90	10–10–39
Western Kentucky	.90	6– 8–39
Birk City, Western Kentucky	.90	6– 8–39
Kentucky River, Eastern Ky.	1.10	6– 9–39
Big Sandy River, Eastern Ky.	1.02	6– 9–39

Michigan Prices

	Flat Price	Date Posted
Central (Basin):		
Porter, Greendale, Crystal, Wise, Midland	$1.02	10– 9–39
Buckeye, Edenville, Bentley, Beaverton	1.00	10– 9–39
Freeman, Sherman, Clare	.97	10– 9–39
Arenac, Ogemaw, W. Branch	.87	11– 9–39
Southwest (Shallow):		
Allegan, Kent Counties	1.03	10– 9–39
Van Buren Co., Bloomingdale	1.03	11– 9–39
Zeeland	.85	10– 9–39
Bangor	.83	10– 9–39

Rocky Mountain States Prices

Colorado:		
Canon City, Ft. Collins, Wellington, Moffat and Florence	.90	10–11–38
Iles, Light	.98	10–11–38
Iles, Heavy	.92	10–11–38
Montana:		
Cat Creek	1.10	10–11–38
Cut Bank	1.00	1– 1–40
Sunburst	.90	11–16–37
New Mexico:		
Artesia	.77	10–11–38
Hogback	1.00	10–11–38
Wyoming:		
Big Muddy	.98	10–11–38
Byron	.55	10–11–38
Dry Creek	.92	10–11–38
Elk Basin	.90	10–11–38
Frannie, Light	.55	10–11–38
Frannie, Heavy	.42	10–11–38
Garland	.50	10–11–38
Grass Creek, Light	.90	10–11–38
Grass Creek, Heavy	.40	10–11–38
Hamilton Dome	.35	10–11–38
Lance Creek	.77	10–11–38
Mill Creek	.72	10–11–38
Oregon Basin	.40	4–20–40
Osage	1.30	10–11–38
Poison Spider	.59	10–11–38
Rock Creek	1.00	10–11–38
Tensleep	.646	10–11–38

Pennsylvania Prices

	Flat Price	Date Posted
Bradford-Allegany	$2.75	1– 1–40
National Transit Lines	2.75	1– 1–40
Sw. Pa. Pipe Line	2.40	1– 1–40
Eureka Pipe Line	2.34	1– 1–40
Corning Grade, Ohio	1.12	11– 4–39

Major Price Changes

	Penna. (Nat. Tr.)	Mid-Cont. (36 Gr.)	Calif. (26 Gr.)
June 19, 1933	Up 10	Up 19	.....
June 26, 1933	Up 10	.....	Up 9-12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
Aug. 11, 1933	Up 10	.....	.....
Aug. 24, 1933	.....	Up 10	.....
Aug. 30, 1933	Up 15	.....	.....
Sept. 6, 1933	Up 10	Up 10	Up 15
Sept. 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
Nov. 6, 1934	Cut 25	.....	.....
Dec. 6, 1934	Cut 25	.....	.....
Jan. 4, 1935	Up 15	.....	.....
Feb. 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
Aug. 29, 1935	.....	.....	Cut *1
Sept. 6, 1935	Up 5	.....	.....
Oct. 29, 1935	Up 15	.....	.....
Nov. 1, 1935	.....	.....	Up *28
Nov. 18, 1935	Up 15	.....	.....
Dec. 6, 1935	.....	.....	Up *9
Jan. 9, 1936	.....	Up 10	.....
Jan. 13, 1936	Up 15	.....	.....
Mar. 7, 1936	.....	.....	Up *18
Dec. 28, 1936	Up 12	.....	.....
Jan. 28, 1937	.....	Up 12	.....
Feb. 24, 1937	Up 10	.....	.....
June 7, 1937	Up 15	.....	.....
Sept. 1, 1937	Cut 22	.....	.....
Oct. 12, 1937	Cut 25	.....	.....
Dec. 1, 1937	Cut 15	.....	.....
March 7, 1938	Cut 17	.....	.....
June 13, 1938	Cut 25	.....	.....
Sept. 1, 1938	Cut 12	.....	.....
Oct. 11, 1938	.....	Cut 20	.....
Jan. 21, 1939	Up 12	.....	.....
Feb. 2, 1939	Up 8	.....	.....
March 6, 1939	Up 12	.....	.....
Oct. 6, 1939	Up 25	.....	.....
Nov. 1, 1939	Up 15	.....	.....
Dec. 1, 1939	Up 10	.....	.....
Jan. 1, 1940	Up 25	.....	.....
Feb. 1, 1940	.....	.....	Cut *7

* Signal Hill 26 gravity.

Crude Production Taxes

Oklahoma—Five percent of gross value less royalty interests.
Texas—2¾ cents or 2¾ percent, whichever is higher.
Louisiana—From four to 11 cents a barrel, depending upon gravity.
Arkansas—2.6 percent of gross market value.
Montana—Two percent of gross value at well and ⅜ of 1c per barrel.
New Mexico—Severance tax of 2 percent on oil and gas.
Wyoming and New Mexico—Production tax based upon state and county assessments.
California—.66443 mills per barrel of oil produced and 17.39 cents an acre on proved lands.

Ohio River used to ship Illinois Basin crude

The Ohio River is playing an increasingly important role in crude shipments from fields in the Evansville vicinity. Conservative estimates put the daily average for the last month at 20,000 barrels, which is being shipped to northern refineries by barge.

Three new barges are expected to be put into service within the next few weeks, and there may be a sharp upturn in river crude traffic this summer.

In addition, with expected completion about July 1 of a 6-inch gasoline pipe line from Indian Refining Company's plant at Lawrenceville, Illinois, to Mt. Vernon, Indiana, being laid by The Texas Company, an estimated 6000 to 10,000 barrels of gasoline will be available daily for river shipment to company distributing points as far north as Pittsburgh and south into Tennessee, areas now served by tank car.

Just northwest of Evansville, Sohio Corporation, largest crude purchaser in the Indiana-Illinois-Kentucky area, is shipping about 15,000 barrels of crude daily from its pipe line river terminal at Mt. Vernon, Indiana. This total represents the holdings of other purchasers in the Griffin and Storms fields, including Ashland Oil & Refining Company, which ships to Ashland, Kentucky; Marimac Oil Company, Evansville, which ships a comparatively small quantity to West Virginia, and others. Sohio Corporation's purchases go to the Latonia Refining Company plant at Latonia, Kentucky.

Due to be completed within the next two weeks is another pipe line from the Griffin field which will have a daily capacity of about 5000 barrels. This line will supply a refinery recently completed at Mt. Vernon by the Indiana Farm Bureau Co-operative Refining Company.

There are three principal terminal points on the Kentucky side of the Ohio, two east of Owensboro and the Sohio Corporation's Birk City field terminal in Henderson County. The company's crude runs during February from Daviess, Henderson and Webster counties totaled 48,300 barrels, shipped by barge to Latonia.

Producers Pipe Line Company, Owensboro, which purchased 77,000 barrels in western Kentucky during February, ships this crude by barge to the Louisville Refining Company. The company's purchases in Indiana, which during February in Posey, Vanderburgh and Spencer counties totaled 5500 barrels, are shipped to Louisville by tank car.

The Owensboro-Ashland Refining Company ships western Kentucky purchases partly by barge and partly by rail.

Other purchasers in the western Kentucky field during February gave the area an output of approximately 8500 barrels daily. It is estimated that nearly two-thirds of this total was shipped on the river.

Propose gas line from X-Ray field, Erath County, Texas

Southwest Gas Company has completed survey for the immediate construction of a 16-mile 6-inch welded natural gas line to extend from the X-Ray gas field, Erath County, Texas, to connect with its system near Stephenville, Texas.

Authorize construction of West Texas gas line

Lone Star Gas Company has authorized the construction of a 7- mile 4-inch natural gas line to extend from the View gas pool, Taylor County, to connect with a 10-inch carrier that serves points in West Texas.

Texas-Empire may provide outlet for Cumberland pool

The Pure Oil Company is completing arrangements with Texas-Empire Pipe Line Company for an outlet for the Cumberland pool, Marshall County, Oklahoma. Nearest connection for this pool will be a tie-in to a trunk line at Armstrong, 15 miles east of the pool.

Northern Natural to loop gas line in Western Kansas

Northern Natural Gas Company, Omaha, Nebraska, will receive bids May 24 for loops on its gas line in Ellsworth County, Western Kansas. The line originates at Amarillo, Texas, and extends to Minnesota.

CALIFORNIA CRUDE OIL PRICES

Posted effective February 1, 1940. All gravities above those quoted take highest price offered in that field.

Gravity	Wilmington	Signal Hill (Long Beach), El Segundo	Seal Beach	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea, Canon	Athens-Rosecrans	Elwood Terrace	Torrance	Richfield	Whittier, East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Newhall, McKittrick, Kern River, Round Mt., Kern Front	Greeley, Canal	Colea Levee, Richfield Western	Mountain View	Elk Hills, Buena Vista Hills, Midway-Sunset, Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills
14-14.9	$0.60	$0.65	$0.64	$0.63	$0.64	$0.65	$0.61	....	....	$0.65	$0.61	$0.61	$0.62	$0.63	....	$0.60	....	....	....	$0.60	$0.60	$0.60	....	....
15-15.9	.60	.65	.64	.63	.64	.65	.61	....	....	.65	.61	.61	.62	.63	....	.60	....	....	....	.60	.60	.60	....	....
16-16.9	.60	.65	.64	.63	.64	.65	.61	....	....	.65	.61	.61	.62	.63	....	.60	....	....	....	.60	.60	.60	....	....
17-17.9	.62	.65	.64	.63	.68	.65	.61	....	....	.65	.61	.61	.62	.63	....	.60	....	....	....	.60	.60	.60	....	....
18-18.9	.64	.65	.64	.63	.71	.65	.65	....	....	.68	.61	.61	.62	.63	....	.60	....	....	....	.60	.60	.60	....	....
19-19.9	.69	.69	.64	.67	.75	.70	.69	....	....	.72	.61	.65	.62	.63	....	.60	....	....	$0.60	.64	.64	.61	$0.60	....
20-20.9	.73	.73	.64	.72	.79	.76	.74	....	....	.75	.65	.69	.62	.67	....	....	....	....	.60	.69	.69	.62	.60	....
21-21.9	.78	.78	.64	.76	.82	.81	.78	....	....	.79	.69	.73	.62	.72	$0.63	....	....	....	.64	.74	.74	.66	.60	....
22-22.9	.82	.82	.69	.81	.86	.86	.82	....	....	.82	.73	.77	.66	.76	.63	....	....	....	.68	.79	.78	.70	.63	....
23-23.9	.86	.86	.75	.85	.89	.92	.86	$0.71	....	.86	.78	.82	.71	.81	.67	....	....	....	.71	.84	.82	.74	.67	....
24-24.9	.90	.90	.80	.90	.93	.97	.90	.77	....	.89	.82	.86	.75	.85	.72	....	....	....	.75	.89	.86	.78	.71	....
25-25.9	.95	.95	.86	.94	.96	1.02	.95	.82	....	.93	.86	.90	.80	.89	.77	....	....	....	.79	.94	.90	.82	.75	....
26-26.9	.99	.99	.91	.99	1.00	1.08	.99	.88	....	.96	.90	.94	.84	.94	.82	....	....	....	.83	.99	.95	....	....	....
27-27.9	1.03	1.03	.97	1.03	1.04	F.O.B.	1.03	.94	....	1.00	.94	.98	.89	.98	.87	....	$0.83	$0.92	.87	1.04	.99	....	....	....
28-28.9	1.07	1.07	1.02	1.07	1.07	Pipe Line	1.07	.99	....	1.03	.98	....	.93	1.02	.91	....	.86	.96	.91	1.09	1.03	....	....	....
29-29.9	1.10	1.10	1.07	1.11	1.10	....	1.10	1.04	....	1.06	1.02	....	.98	1.06	.96	....	.90	.99	.95	1.14	1.07	....	....	....
30-30.9	1.14	1.14	1.12	1.15	1.14	....	1.14	1.09	F.O.B.	1.09	....	....	1.02	1.10	1.01	....	.94	1.02	.99	1.19	1.11	....	....	....
31-31.9	....	....	....	....	1.17	....	1.17	1.14	Ship	....	....	....	1.07	1.14	1.05	....	.98	1.06	1.02	1.24	....	....	....	....
32-32.9	....	....	....	....	1.20	....	1.20	1.19	....	....	....	....	1.11	1.18	1.09	....	1.02	1.09	1.06	1.29	....	....	....	....
33-33.9	....	....	....	....	....	....	....	1.24	$1.21	....	....	....	1.15	1.22	1.14	....	1.06	1.13	1.10	1.34	....	....	....	$1.12
34-34.9	....	....	....	....	....	....	....	1.29	1.25	....	....	....	1.20	1.26	1.19	....	1.10	1.16	1.14	....	....	....	....	1.17
35-35.9	....	....	....	....	....	....	....	1.34	1.29	....	....	....	1.24	....	1.23	....	1.14	1.20	....	....	....	....	....	1.21
36-36.9	....	....	....	....	....	....	....	1.39	1.33	....	....	....	1.28	....	1.27	....	1.18	1.23	....	....	....	....	....	1.25
37-37.9	....	....	....	....	....	....	....	1.44	1.37	....	....	....	1.33	....	1.31	....	1.22	1.26	....	....	....	....	....	1.29
38-38.9	....	....	....	....	....	....	....	1.49	....	....	....	....	1.37	....	1.36	....	1.25	1.30	....	....	....	....	....	1.33
39-39.9	....	....	....	....	....	....	....	1.54	....	....	....	....	1.42	....	....	....	1.29	1.34	....	....	....	....	....	1.38
40-40.9	....	....	....	....	....	....	....	1.59	....	....	....	....	1.46	....	....	....	1.33	1.37	....	....	....	....	....	....
41-41.9	....	....	....	....	....	....	....	....	....	....	....	....	1.50	....	....	....	1.37	1.40	....	....	....	....	....	....
42-42.9	....	....	....	....	....	....	....	....	....	....	....	....	1.54	....	....	....	1.41	1.44	....	....	....	....	....	....
43-43.9	....	....	....	....	....	....	....	....	....	....	....	....	1.59	....	....	....	1.45	1.47	....	....	....	....	....	....
44-44.9	....	....	....	....	....	....	....	....	....	....	....	....	1.63	....	....	....	1.49	1.51	....	....	....	....	....	....
45-45.9	....	....	....	....	....	....	....	....	....	....	....	....	1.67	....	....	....	1.53	1.54	....	....	....	....	....	....
46-46.9	....	....	....	....	....	....	....	....	....	....	....	....	1.71	....	....	....	1.57	1.57	....	....	....	....	....	....
47-47.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.61	....	....	....	....	....	....	....
48-48.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.64	....	....	....	....	....	....	....

WORLD-WIDE DEVELOPMENTS

By WM. V. GROSS, Associate Editor

France

New field reported found near St. Marcet, France

Press dispatches from Paris April 28 stated commercial production had been developed at St. Marcet in Haute Garonne, near St. Gaudens, France. Production of oil presumably was developed at 2300 meters, where a recovery of 10,000 liters was reported. The wildcat previously logged a show of gas at 1500 meters.

Prior to the St. Marcet strike, the only worthwhile oil production in France was obtained from wells and mines in the Pechelbronn district.

Magnitude of the new field is unknown, but Pechelbronn production has for years been only a drop in the bucket compared with domestic needs in France.

Mexico

Labor unions agree to go along with Cardenas on expense cuts

Performing an abrupt about face, Mexican oil labor unions last week announced intention of cooperating with President Cardenas in efforts to reorganize the Mexican petroleum industry in such a manner that would reduce personnel and wages.

Previously the labor unions had voiced objections to several points in Cardenas' reorganization plan, complaining they violated the spirit of the charter of the unions and of the revolutionary party.

Hints that the president had assumed an arbitrary attitude in conferences with labor-union leaders and told them to cooperate or suffer the consequences were denied by the leaders, whose spokesman was Rafael Simoneen, secretary of the union's general executive committee.

Meanwhile, Petromex announced acquisition of the interned German tanker Times Amussen for $200,000 and rechristening of same as the Juan Casiano. Capacity of the tanker is reported to be 68,000 barrels of oil and 20,500 drums of gasoline.

Petromex also announced March production of crude oil was 3,286,000 barrels.

Experts retained by Mexico to evaluate properties expropriated March 18, 1938, must submit their completed reports by May 28. In some cases Mexico is not allowing experts appointed by smaller confiscated companies to function although the government has complained on numerous occasions because the companies have refused to appoint appraisal experts. Those experts whose services have been rejected by the government have been supplanted by others of the government's choosing.

Exports of Mexican crude and refined petroleum continue below expectations. It is anticipated the rather substantial exports to the United States may be somewhat further hampered by inauguration of the duty of one half cent U. S. currency per gallon which Mexico now has to pay. The United States Revenue Office recently announced that all countries except Venezuela, Holland and Colombia, have filled their quota for low-duty oil imports to the United States.

Bolivia

Will Bolivia restore oil properties, is question

Students of South American politics and business are wondering whether the recent restoration of constitutional government in Bolivia along with the inauguration of President General Enrique Penaranda del Castillo will have any bearing on the status quo of the case of the Standard Oil Company of Bolivia, whose properties were seized by previous incumbents.

President Penaranda stressed in his inaugural address the democratic ideals and the Pan-American sentiments of the new government, and said foreign capital would be welcome in Bolivia.

Encouragement was taken in some quarters from Penaranda's immediate recognition of responsibilities to other nations through promise of resumption of payments on the country's foreign debt suspended at the start of the Chaco war eight years ago.

Among other cabinet members of the new Bolivian government is Alfredo Jordan, who has been made minister of mines and petroleum.

New Zealand

Active exploration work current in New Zealand

P. C. Webb, minister of mines at Wellington, advises that intensive exploration work is being carried out in New Zealand and that preliminary geological work is being supplemented by geophysics and drilling. His communication reads in part as follows:

"Efforts to locate oil in payable quantities have extended over 70 years. These efforts consisted of geological investigations and the drilling of several wells, the most success being achieved in the New Plymouth District of the North Island where a few wells yielded a semi-commercial output.

"Though the work undertaken previously did not prosper, the results are inconclusive; much of it was ill-directed and futile, and of the remainder some wells did not reach their objectives, owing to poor equipment and lack of funds. There was also some difficulty in obtaining satisfactory tenure or title to potential oil-bearing lands.

"In 1937 new legislation was enacted and came into force as from January 1, 1938. Following the passing of this legislation considerable interest was evinced and a large number of prospecting licenses were granted.

"Very active prospecting operations are being carried out on all licensed areas.

"You will appreciate that as the present search for oil has only been in operation for a short period it is not possible to give you most of the information asked for. However, the following information, which is evidence that very intensive explorations are being carried out, is submitted:

"The number of licenses granted are as follows:

	Number of Licenses	Area Square Miles
NORTH ISLAND:		
North Auckland	1	198
Gisborne	6	1044
Hawkes Bay	11	1748
Taranaki	29	5365
Wellington	12	2296
SOUTH ISLAND:		
West Coast	5	663
Otago	1	186
	65	11,500

"These licenses are nearly all held by powerful oil organizations fully equipped and adequately financed. Two drilling plants are already in New Zealand and the first wells are now about to be drilled. In addition very modern geophysical equipment has been imported and is being extensively used by licensees.

"In the conduct of operations by licensees the following are directly employed: geologists, 28; palaeontologists, 2; surveyors, 9; draughtsmen, 3; laboratory assistants, 5; drillers and assistants, 24; and others, 42.

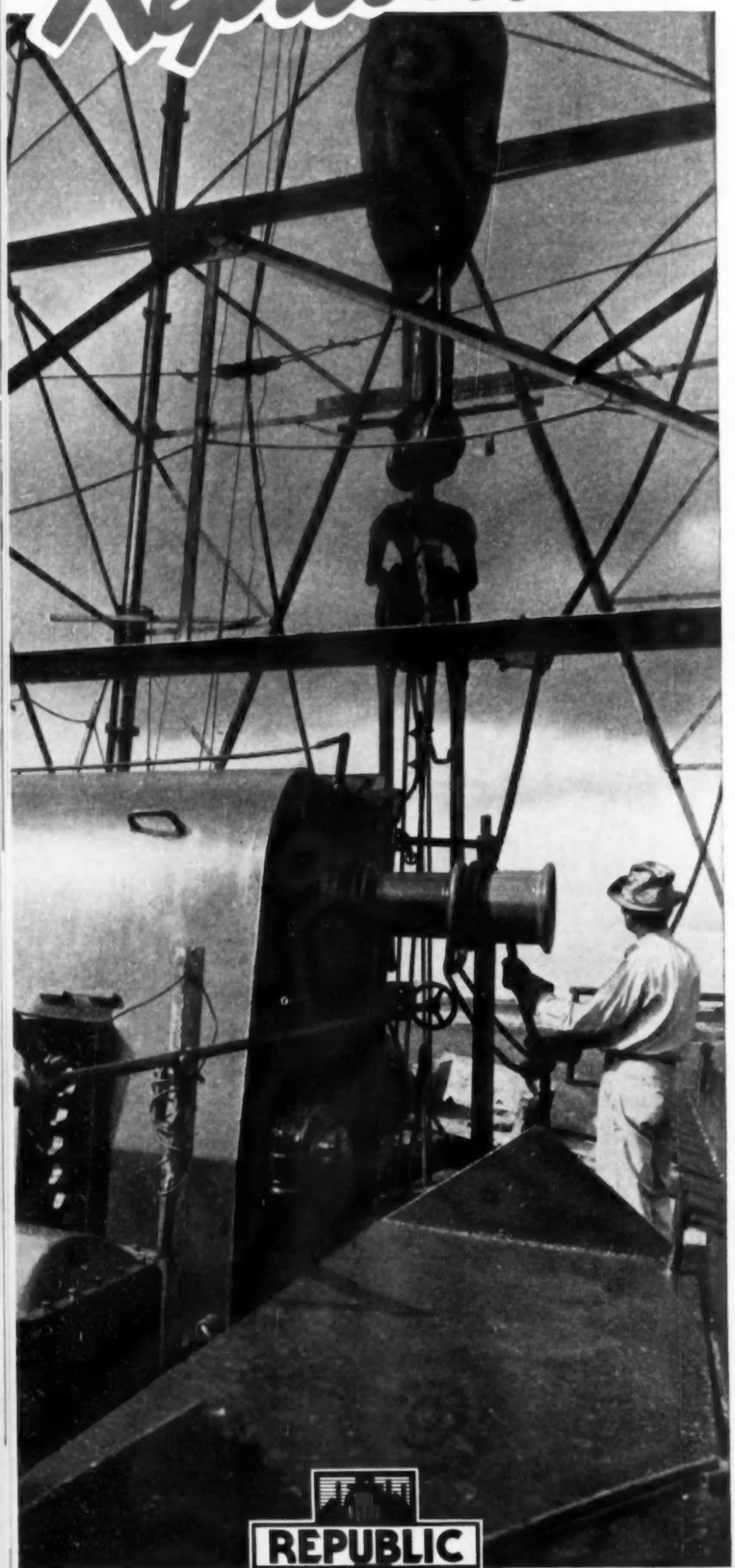
"Production of crude petroleum in New Zealand to December 31, 1939, is estimated to be 2,987,631 gallons. The majority of this was produced in the New Plymouth District."

Argentina

Argentina furnishing most of crude for refineries

Figures furnished by R. Horton Henry of Buenos Aires indicate Argentina's domestic production is furnishing far more crude for refinery runs than the imported product, the totals processed during February being 285,703 cubic meters of domestic crude against 45,694 cubic meters of the imported product.

Republic Alloy Steels—



their economic advantages in Welded Equipment!

With the passing of wrought iron as the common form of commercial ferrous material, it became necessary to develop new and improved methods for welding together the carbon and alloy steels which took its place in industry.

With the introduction of fusion by gas flame or the electric arc and the electrical contact type of welding, the resulting welds generally showed properties different from those of the carbon or alloy steels being welded.

The localized melting and sudden chilling resulted generally in welds which were harder but less ductile than the metal being welded. Where this change in physicals was detrimental, it became necessary to use the lowest carbon steel with a minimum of alloy additions—both in the welding rod and in the parts being welded.

Where steels of high elastic properties and strength are needed, and especially where weight reduction is important, low carbon complex alloy steels properly welded offer distinct advantages over higher carbon plain carbon steel. Such alloy steels at equal or higher yield points show lower weld hardening than the equivalent plain carbon, with the added advantages of improved resistance to atmospheric corrosion, improved ductility of weld at room temperature, better retention of toughness at sub-zero temperatures and better creep resistance at elevated temperatures. And, because of their lower carbon, they will have better forming qualities.

A case in point—a steel of the low carbon alloy type, such as Republic Double Strength Steel, when welded with rod of the same material will be definitely superior to a welded carbon steel of approximately the same yield strength (50,000 lbs. per sq. in. min.). This strength would require a carbon content of over .45% in plain carbon steel and, even when preheated for welding, the properties of the weld would not compare with the alloy weld in ability to be formed, in resistance to atmospheric corrosion and in ductility.

Alloy steels today are an economic necessity in the manufacture of many types of equipment in which welding plays a part in cutting costs and making stronger, safer, longer-lasting products.

Whatever your problem in steel—Republic's metallurgical staff can help you. Write Republic Steel Corporation, Alloy Steel Division, Massillon, Ohio; General Offices, Cleveland, Ohio.

REPUBLIC STEEL
REG. U. S. PAT. OFF.

BERGER MANUFACTURING DIVISION • NILES STEEL PRODUCTS DIVISION
STEEL AND TUBES DIVISION • UNION DRAWN STEEL DIVISION
TRUSCON STEEL COMPANY

Republic
WORLD'S LARGEST PRODUCER OF ALLOY STEELS

U. S. FIELD OPERATIONS

Oklahoma

Booch sand added at North Cromwell pool

Tulsa.—Initial Booch sand production was production proven at C. W. Titus' Franks 1, SWc NW 25-11n-8e, in the North Cromwell pool, Seminole County. Topped at 3084 feet and drilled to 3120 feet, pay was shot with 70 quarts at 3090-3115 feet. In the first 12 hours, the discovery flowed 200 barrels through casing and was completed on a 24-hour potential of 110 barrels of 36-gravity crude and 21 barrels of water. Gas is estimated over 2,500,000 cubic feet. Horizons already productive in the pool include Calvin, Gilcrease, Cromwell and Wilcox sands.

Arbuckle lime production indicates a good reserve for the Frederick district in southern Tillman County. Indian Territory Illuminating Oil Company's Graham 4, NWc NE 1-3s-19w, an old Canyon lime well, flowed 1662 barrels of oil in 12 hours. Pay was logged at 5036-5101 feet. Both north and northwest offsets are Arbuckle lime wells, while south and southeast offsets may be forced to deepen.

Two deep tests in Western Oklahoma Basin area were testing shows. Magnolia Petroleum Company's Fiekes 1, C SW SW 31-18n-14w, 4 miles northwest of Oakwood, Dewey County, was having difficulties with gas heaving the mud column. Mud has been constantly reconditioned the past week. Operators ordered 7-inch pipe run to 9475 feet. Bit is in the Mississippi lime. Sinclair Prairie Oil Company's German 1, SW NW NW 1-6n-13w, a Caddo County wildcat, lowered a shot to test the Simpson zone at 8810-9370 feet.

Third Zone at Langston

Ohio Oil Company opened the third producing zone in Langston pool, Logan County. Knight 1, SE NE SW 12-17n-1w, a failure in second Wilcox sand at 5128 feet, plugged back to 4900 feet and perforated casing at 4820-70 feet in Misener sand, topped at 4840 feet. Gauging 16 barrels of oil and 2,600,000 cubic feet of gas, the producer is showing no water. First Wilcox sand and the Marshall zone are also productive in the pool.

Two Pottawatomie County wildcats were showing for producers west of West Earlsboro pool. Alma Oil Company's Harrington 1, NW SE NW 24-9n-4e, found Wilcox sand dry at 4510 feet and perforated pipe at 4185-4230 feet in Hunton lime. Oil filled 300 feet up the hole. Acid is expected to make a commercial producer. J. W. Measel's Billington 1, SE NE NE 26-9n-4e, 2 miles southwest of production, also showed water in Wilcox sand at 4493 feet and plugged back to perforate Hunton lime, topped at 4203 feet, for a good show of oil and gas. It will be acidized.

Pure Oil Company's Cumberland discovery filled all available tankage and was shut in for a pipeline outlet. Little 1, C W½ NE SE 28-5s-7e, flowed 4524 barrels on a 24-hour run, 4218 barrels on another through casing with tubing closed. On a 16½-hour test through casing, it flowed 2851 barrels with tubing pressure of 1300 pounds and casing pressure of 1100 pounds. The large potential can be partially attributed to an excellent clean-out job. A regular acid jet gun spraying water at high velocity was utilized in cleaning the side walls of the Tulip Creek sand. This jet hookup is attached to the tubing and works with the regular circulating medium.

Pipe Line Planned

Pure Oil Company is considering a crude outlet by tying in on The Texas-Empire Pipe Line Company's trunk line at Armstrong station, 15 miles east of the Cumberland pool.

Work was under way at four other tests. Little 1-B, NE SW SE 28-5s-7e, was rigging up rotary tools, and Thomas A-1, SW NE NW 28-5s-7e, had derrick up. Noble Drilling Company has contract for these two tests. On the Bryan County side of the Washita River, materials were moved in at Stewart A-1, SW SE NE 28-5s-7e, and Olson Drilling Company will shortly move in rotary rig. Loffland Brothers Drilling Company have tools at Park College 1, SWc SE 27-5s-7e.

Tubing was being run at Johnson-Kemnitz Drilling Company and McGraw Oil Company's Neff-Godfrey 1, SW SE NE 14-6s-6e, west of Aylesworth in Marshall County. Over 400 feet of oil and 100 feet of water was standing in the hole. Plug back depth is 4100 feet.

The St. Louis pool was extended west by Mark's Coley 1, SW NE NW SW 14-7n-3e, a semi-wildcat in Pottawatomie County. Hunton lime, topped at 4370 feet, was shot with 90 quarts and acidized with 5000 gallons at 4370-4410 feet. A flow of 391 barrels in 24 hours was gauged through casing.

Wildcat Activity

Morgan & Flynn staked location for Brown 1, SWc NE 30-3n-5e, 6 miles southwest of Ada in Pontotoc County. West of Bebee pool, Roy Starr Oil & Gas Company and W. C. McBride staked State-Bayless 1, SEc NW 32-5n-4e, on a 640-acre block.

Hembree & Griggs have rotary rig at McKeown 1, SE SW NW 25-8n-4e, west of the Maud pool, Pottawatomie County. Near Wanette, Simpson-Roodhouse Drilling Company was making hole below 2850 feet at Neal 1, NW NE SE 33-6n-3e. Eason Oil Company et al's Wells 1, NE NW NE 15-16n-2w, in Guthrie, set surface pipe and was waiting. Townsend & Shaffer were making hole at Jackson 1, SW SE NW 20-6n-5e, Pottawatomie County. In Atoka County, Holly et al's Johnson 1, NWc NE 36-3s-13e, was drilling below 915 feet. Hall, Troup & Moore staked location for Strickland 1, NW SE SE 3-4n-3e, north of Stratford and south of Byars pool in Garvin County.

W. I. Southern staked Davis 1, SW NW NW 33-16-6e, an outpost test southwest of Skelyville pool, Lincoln County. Summit Drilling Company staked Griggs 1, NW NE NW 7-15n-5e, an offset to the recent Prue sand discovery which opened West Kendrick pool. Bryan Petroleum Company was moving in materials at Ah-Sey 2, NWc NE 34-14n-7e, an offset to its West Arno pool opener, Creek County.

North of Bethel pool and west of Cromwell pool, Seminole County, D. M. Noyes et al's Coleman 1, NE SE NW 22-10n-7e, was drilling below 1250 feet. O. C. Meyers has contract for a 4600-foot Wilcox sand test on this 500-acre block.

R. Garrett opened a new gas area at Escoe 1, SWc SE 16-13n-17e, 3 miles northeast of Oktaha gas pool in Muskogee County. Sand at 1656-60 feet showed for 7,000,000 cubic feet.

Olson Drilling Company and Anderson-Prichard Oil Corporation's Geis 1, C NE SW 15-18n-9w, Kingfisher County, was drilling below 9350 feet in Dolomite, topped at 9150 feet. Phillips Petroleum Company's Grape 1, C NW SE 30-18n-5w, west of Lovell in the same county, was rotating around 6600 feet after logging Lovell lime at 4480 feet.

Kerrlynn Oil Company completed a wildcat gas well at Butterly 1, NEc SE 22-1n-1e, 6 miles south of Wynnewood in Garvin County. From 37 perforations at 2648-60 feet, gas gauged 2,600,000 cubic feet. Originally this test drilled to 5005 feet, and plugged back to 3124 feet.

Carl Carter will move in rotary tools for a 2750-foot test at Hinton 1, SEc 1-7n-17w, southwest of Gotebo district, Kiowa County, a farm-out of The Carter Oil Company.

Kansas

Max pool outpost shows for large producer

Wichita.—Stanolind Oil & Gas Company's Helmers 1, CEL NE NW 1-22-12w, southeast of the Max pool and 1⅛ miles east of South Sittner pool, Stafford County, filled at the rate of 150 feet of oil per hour, indicating a large producer. Arbuckle lime was topped at 3553 feet.

J. E. Trigg and Allen abandoned Helmers 1, CW½ NW SE 2-22-12w, defining South Sittner area to the southeast: Arbuckle lime was drilled at 3608-30 feet, shot with 5 quarts and acidized

with 1000 gallons but the extension test failed to show.

M. B. Armer and Vernon Oil & Gas Company's Hoffman 1, NWc SW 18-16-11w, Lansing-Kansas City lime discovery for Prusa West pool, Barton County, deepened to 3321 feet in Arbuckle lime, topped at 3317 feet, and filled 800 feet with oil in one hour. Casing was lowered for a test. Old total depth was 3217 feet.

B. B. & M. Oil Company et al's Esfield 2, C S½ NE NE 28-16-11w, Prusa pool, was completed for a draw-down potential of 16,789 barrels daily. Pay is Arbuckle lime at 3370-72 feet. Southeast of this well, George Hinkle completed Krautwurst 1A, C N½ NE SE 34-16-11w, for a pumping gauge of 71 barrels in 15 hours after acidizing with 2500 gallons to open a new Arbuckle-lime pool. The horizon was logged at 3394-3402 feet.

West Ellinwood pool, Barton County, was defined as Crown Petroleum Company's Hull 1, C S½ SW SE 6-20-11w, was dry at 3407 feet. Four miles west of this pool, McMorrow et al abandoned Tonkin 1, SWc 4-20-12w, at 3430 feet in Arbuckle lime. Only a slight show of oil was noted at 3422-30 feet.

Skelly Oil Company extended Burnett pool, Ellis County, northwest with Riddler 1, CEL SE NW 1-11-18w, which established draw-down potential of 17,979 barrels daily. A maximum allowable of 3000 barrels is permitted by the Kansas Corporation Commission. Arbuckle dolomite was acidized with 500 gallons at 3482 feet. South of this producer, Shell Oil Company's Riddler "A" 1, SE SW NW 12-11-18w, cored in lime at 3406-17 feet to recover only slight staining and fair porosity with a sulphur odor at bottom of the core. Casing was cemented at 3417 feet, and hole plugged back to 3383 feet in dolomite. With 59 perforations at 3365-77 feet, the hole filled 2920 feet with oil in 2 hours. On a 4-hour swabbing test, it made 271 barrels of oil and no water.

Northeast of Burnett pool, Lario Oil & Gas Company's Morrison 1, C S½ SW NE 32-10-17w, a wildcat, topped Arbuckle lime at 3661 feet and drilled to 3681 feet without a show, and may be abandoned.

Gulf Oil Corporation extended production in Stoltenberg pool, Ellsworth County, ½ mile east on the south end. Mallir 1, CWL SW NE 16-16-10w, topped Arbuckle lime at 3317 feet and penetrated saturation at 3321-22 feet. In one hour, oil rose 3000 feet up the hole.

W. N. Bartlett abandoned Phannensteil 1, C SE NW 30-13-25w, a wildcat southwest of Wakeeney pool, Trego County. Arbuckle dolomite was dry at 4650-84 feet.

Lario Oil & Gas Company's Mehl 1, CEL NE SE 35-16-10w, a mile southeast of Ehller pool, Ellsworth County, may extend that area in the Arbuckle horizon. Topped at 3302 feet and drilled to 3315 feet, plugs were drilled to test.

Three miles east of North Toulon pool, Ellis County, Gulf Oil Corporation will drill a wildcat in CNL SW SE 30-13-16w. Big West Drilling Company, Tulsa, moved in a derrick to drill Stanolind Oil & Gas Company's Judd 1, C SE SE 15-21-38w, a wildcat 30 miles west of production in the Nunn pool of Finney County. Located in Kearny County, Western Kansas, this test should disclose important geologic data on this basin area.

Vickers Petroleum Company's Scott 1, CEL SW NE 20-20-11w, ¼ mile northwest of Raymond pool, had 900 feet of oil standing after drilling to 3304 feet in Arbuckle lime. In Hittle pool, Cowley County, Arthur Brewer's Curffman 2, NW NE SE 28-31-4e, was dry at 3407 feet in lime. Barwick & Sheridan were spudding Warren 1, C W½ NW NW 18-35-6e. McKnab et al's Sherwood 1, NE SE SW 4-35-5e, was drilling below 3150 feet.

In Rice County, two important wildcats were staked. Derby Oil Company et al's Monroe 1, CWL NW SE 26-18-9w, had rig up, and Clyde Pulse et al's Baker 1, CSL SW SW 33-20-6W, 2 miles west of Welch pool, was drilling with rotary. Earl Wakefield was moving in tools at Diehle 1, C N½ NW NW 4-9s-17w, north of Nyra pool, Rooks County.

Westgate-Greenland Oil Company was drilling below 1500 feet at Schlickav 1, C W½ SE SW 8-25-4w, 1½ miles north of the abandoned Haven pool in Reno County.

G. A. Fuller et al's Stilt 1, CSL SE NE 21-27-1w, west of Wichita, Sedgwick County, pumped 2 barrels of oil and 20 barrels of water per hour, with water increasing. Pay is zones in the Kansas City lime at 2652-2806 feet.

Forest City Basin

Nebraska test through hard lime; drilling deeper

St. Joseph.—Pawnee Royalty Company was preparing to test Hunton lime at Buchholz 1, C NW SW 17-1n-16e, Richardson County, Nebraska. Drilling was stepped up following a sustained period of drilling in hard lime which during one 24-hour period required four new bits. The company's Boice 1, CSL N½ NE NE 18-1n-16e, Fall City discovery, topped Viola lime at 2911 feet and landed 6-inch pipe at 2916 feet. Sulphur water showed at 2973-77 feet, and the test was bailing 7 barrels of water per hour with 2000 feet of water in the hole. Operators will deepen to test lower Viola, Wilcox and Arbuckle lime.

A Douglas County, northeastern Kansa wildcat, Kerr-Lynn Oil Company's Chas. Wise 1, C SE SW 28-12-20e, on the outskirts of Lawrence, was shut down for repairs at 561 feet. In Cloud County, E. T. Lindsay and Bells-Wells Oil Company's LeBlanc 1, C W½ SW NW 35-6s-1w, was drilling below 2700 feet in Mississippi lime. Wamhoff and Lebsack Oil Company's Maduska 1, C SE NE 36-8s-20e, Leavenworth County, logged Plattsmouth at 110-18 feet, Leavenworth at 123-25 feet, and was fishing at 840 feet.

Dan Kornfeld & W. H. Ebekes' Mathies 1, NEc 22-5n-1w, Fillmore County, Central Nebraska, was under-reaming 7-inch pipe at 2400 feet. Uhri Oil Corporation's Ogle 1-A, SW NE SE 9-1n-14e, was drilling below 275 feet.

Oscar Gruber shut down Fee 1, C SW SE 8-67n-40w, Iowa, at 1300 feet. Water filled to within 50 feet of top.

Ettington et al's Clark 1-A, NEc SE 8-63n-14w, Missouri, topped Hunton lime at 739 feet and was drilling below 1015 feet with nothing showing.

Indiana

Only one new start as high water cripples activity

Evansville.—High water still crippled Indiana oil activity last week. Harry Appell et al's A. C. Thomas 1, NE SW NE 12-7s-8w, Luce Township, Spencer County, just west of the recently completed Waltersburg-sand producing C. L. Snell, trustee's Prudential Life Insurance Company 1, was the new start.

Spudded and drilling at 300 feet was a cable-tool test to the Devonian in eastern Gibson County, L. B. Jackson's Barthold 1, NW NW SW 23-2s-9w, Columbia Township.

With the Trenton as objective Harry Schwarz et al's Everhardt 1, SE SE 21-9n-5w, Owen County wildcat north of Worthington, found the Devonian dry and was drilling below 2300 feet.

Disappointing was a southwest diagonal offset to the oil discovery of the Rockport field, Spencer County, Walter Duncan's John D. Miller 1, NE SW NE 31-7s-6w, drilled through the Palestine sand and was plugged.

Two miles southeast of the discovery, Jack Warren was spudding Ray Harvey 1, SE NE 15-8s-6w.

In the Hatfield area of Spencer County, just west of Trio Oil Company's Frank Swallow 1, a small Waltersburg-sand producer, Rogers & Schuller were testing a show of oil in the Waltersburg at Miller 1, SE SE SW 32-6s-7w.

In Warrick County, northeast of Lynnville, L. B. Jackson and Midwest Development Company's Schumacher 1, NE NW NW 34-3s-8w, was drilling at 150 feet with cable tools. Nelson Brothers, Princeton, are the contractors.

South of the Caborn field in Marrs Township, Posey County, Paul Rossi set surface casing for Sarah Pendell 1, SW SE SE 30-6s-12w.

Kentucky

Locate Daviess County test on farm-out acreage

Owensboro.—Five miles northeast of Owensboro, Daviess County, Jim McCummings located Thompson 1, Gulf Refining Company farm-out just east of the McClosky discovery brought in last year by J. C. Preston on the Abell tract.

In the Utica pool, Daviess County, Foursome Oil Company's Roy Hansford 2 was drilling at 1275 feet. Bob Riley was moving in materials for Baird Heirs 3.

In McLean County, south of Livermore, W. E. Hupp et al's J. F. Smith 2, was abandoned through Bethel sand at 1540 feet.

In Henderson County, 2 miles north of Sebree, L. T. Boyce's Arabella Walker 1 found McClosky dry and was deepening below 2435 feet.

Schedule Volpe hearing

Operating rules for the Volpe field in Webb County will be discussed at a hearing before the Texas Railroad Commission set for May 10. Magnolia Petroleum Company and Harvey & Henderson own producing wells in the field.

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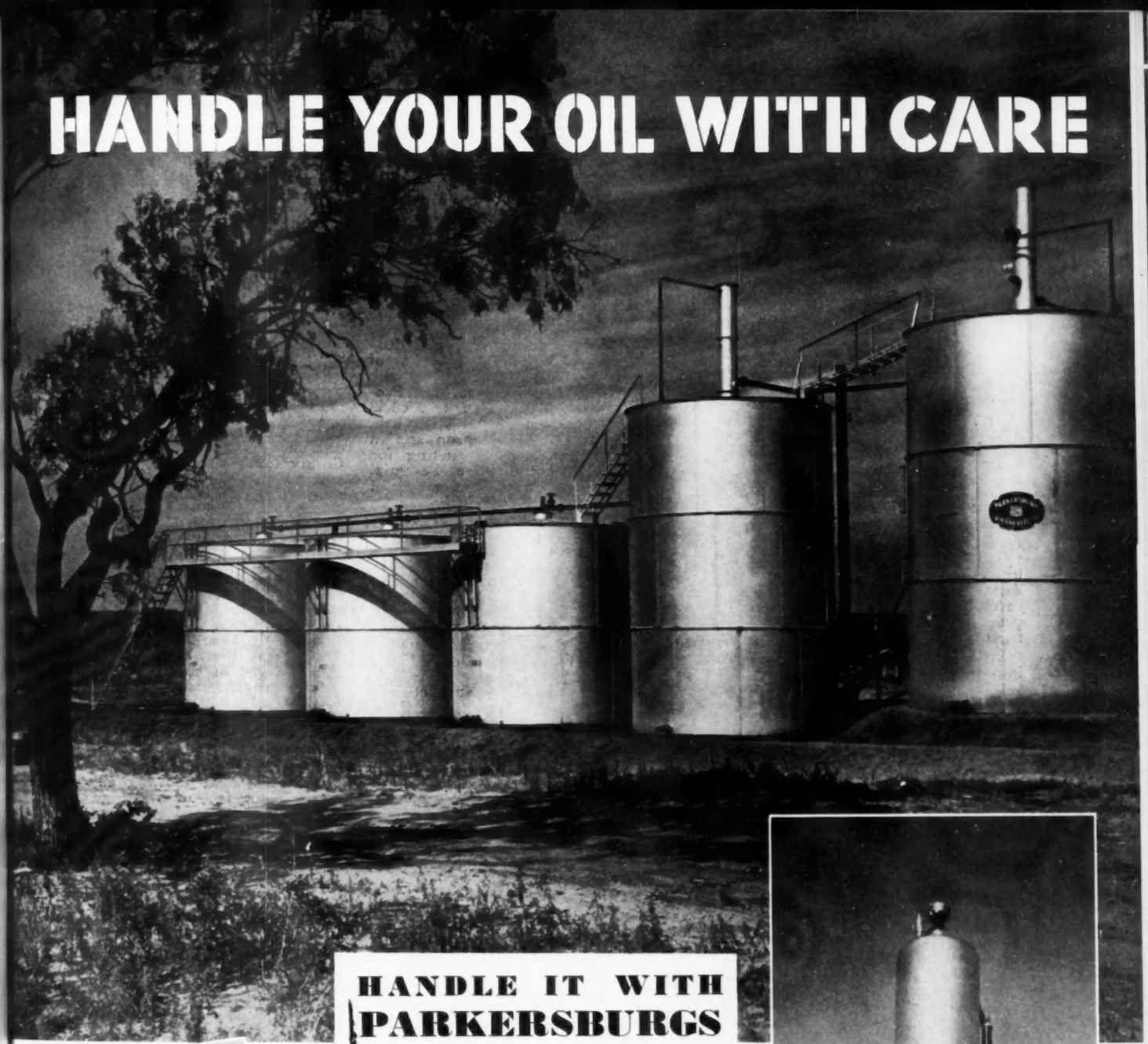

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West Texas

Crockett County test that blew wild is gasser

San Angelo.—Production tests given a spectacular wildcat discovery in western Crockett County that blew wild for 3¼ days reveals it is predominately a gasser, with oil flow varying from 10 to 20 barrels hourly. Restoration of production from Soma Oil & Gas Syndicates' Noelke 1, SE SE NW HE&WT Section 30, Block GG, began April 28 after drilling plugs from 7-inch pipe at 976 feet and drilling out cement to 1067 feet, or 8 feet off bottom. The gas flow revived promptly, varying from a 25,000,000- to 50,000,000-cubic-foot daily rate with fluid volume estimated at 200 barrels hourly. The well made mostly drilling fluid and refuse used in killing the wild flow when given intermittent open flow tests the first day. The oil yield gradually increased as the well cleaned itself, and tests 30-gravity, somewhat similar to crude from the Yates field.

String of tubing was to be snubbed into the hole late last week preparatory to making official potential gauge. The Chicago owners of the strike erected four 1000-barrel lease tanks, and also moved in four high-pressure separators. Production is generally accepted as being from the Yates sand zone, which has not heretofore accounted for commercial production in the county, although it is the first producing level in the Yates field proper.

Ability of the Noelke ranch well to revive its flow after being killed to run pipe had a stimulating influence on lease trading in the area. Independents have bought the most close-in acreage at rising prices, while numerous potential buyers are on the ground gathering information and studying performance of the well. Opinion is divided as to whether the strike marks the entry of a small edition of the Yates field, which is the most attractive in West Texas, or whether the oil and gas is coming from a crevice fed by underground seepage from the Yates field. Yates has experienced extensive seepage since the early stages of development. The new discovery is 4½ miles east of the south end of the Yates field. Cash bonuses paid by independents and majors for protection leases in general vicinity of the well indicates these buyers have faith in the general area being productive.

Additional drilling obligations have been assumed by lease buyers, and two direct offsets are starting up. W. C. Ray, trustee, made location for a south offset on a 10-acre lease. Lewis & Shannon, owners of a 20-acre lease, authorized an east offset. Henry Schooler, Big Lake contractor and owner of 1/32 interest in the discovery and a 200-acre block, made location ½ mile west and in northeast corner I&GN Section 67, Block 1. J. K. Hughes Oil Company assumed drilling obligation in purchasing 1280 acres, centering upon HE&WT Section 28, Block GG. M. & M. Drilling Company's Bouscarens 1, a mile north of the producer, was drilling at 500 feet.

Development of the Ordovician oil horizon in the Sand Hills field, Crane County, is due for a revival as result of completion of a prolific well outside the Permian oil area and 3¼ miles southeast of nearest deep production. Gulf Oil Corporation et al's J. B. Tubb 1-A, PSL Section 20, Block 27, became the shallowest and second largest deep producer in registering a potential of 5131 barrels of 38.1-gravity oil with 2,060,000 cubic feet of sweet gas. Production is from Ellenburger at 5760-83 feet, with an elevation of 2548 feet. The usual overlying Simpson section was absent, probably accounting for the high structural position. Potential was based upon open-flow gauge of 855.14 barrels oil and 47.38 barrels of bs&w during last 4 hours of 6-hour test. An analysis of the water is to be made to determine if it is from the Ellenburger, or is drilling fluid. The Sand Hills field and McKnight sector have been given 16 Ordovician tests. Eight proved dry; 2 were plugged back for pumping production in the Simpson, 5 are flowing Ellenburger wells. The producers are owned by Gulf Oil Corporation.

Continental Oil Company et al's Todd 3, east offset to their recent Crinoidal lime discovery on an Ordovician prospect in Crockett County, was drilling at 5400 feet, with an elevation of 2521 feet. The discovery entered the Crinoidal at 5590 feet, produces from saturation at 5615-90 feet, and is bottomed at 5691½ feet, or 1½ feet in the Simpson section, which is being counted upon along with the Ellenburger as a potential producing zone.

Humble Oil & Refining Company's Young 1, northern Pecos County wildcat, was drilling lime and shale at 7365 feet in Simpson, topped at 5624 feet. This test established a record for the district in logging 439 feet of detrital formation, and is also encountering a record section of Simpson. Between this deep test and the Apco pool, shallowest Ordovician area in the district, R. G. Patillo et al were rigging up to drill P. E. O'Neil 1 near south corner H&GN Section 74, Block 10, to try for Ordovician production. Plymouth Oil Company's Levy 1, projected Ordovician test for northwestern Pecos County, was drilling at 1500 feet.

Flow in Terry County Test Boosted

George P. Livermore et al's Jacobson 1, first producer for Terry County and ⅝ mile south by east extension for Slaughter field, boosted its flow to 25 barrels oil hourly after using 2500 gallons of acid at 4992-5035 feet. Performance of this well will encourage more drilling on the south end. Three offsets are required. Top of brown lime was called at 3864 feet, and first solid lime at 4220 feet, with an elevation of 3531 feet.

Humble Oil & Refining Company's Annie Armstrong 1, NWc Section 889, widened the Wasson field, Yoakum County, ½ mile east in flowing 22 barrels of fluid hourly, 5 percent acid load, after using 1000 gallons of acid through perforations at 4911-5100 feet. More acid treatments are scheduled. The company's Armstrong 7950-acre lease embraces 2 rows of sections due east of the field. Frank Kelsey and Guy Mosley, owners of NE¼ Section 759, situated immediately east of production, sold the tract to Mabee Oil & Gas Company for $45,000, involving ⅓ cash and remainder payable from production. One-sixth royalty applies to this tract.

The west edge of the north portion of the Seminole field, Gaines County, accounted for a record producer when Magnolia Petroleum Company and Atlantic Refining Company's H. & J. 4-265, C NW NW Section 265, flowed 378 barrels oil natural in 5 hours from pay at 5155-5314 feet. This partnership is operating 3 rigs on as many sections in the field.

The Gulf-McElroy field on the Crane-Upton County line contributed an exceptionally large well when Gulf Oil Corporation's McElroy 214 earned a potential of 5979 barrels after 590-quart nitro shot at 2650-2831 feet.

New Ward County Area

A new producing area for Ward County 1½ miles west of a shallower oil belt on University lands near Wickett was in prospect when Atlantic Refining company et al's University-Wickett 1, C SW NE Section 12, Block 16, logged broken saturation in coring to 2740 feet. First evidence of oil and gas appeared in core at 2677-85 feet, and formation tester used at 2576-2737 feet yielded small volume of gas and gas-cut mud.

Kenneth Slack et al's Hayes 1, Ward County gas strike on the Quito structure, began spraying a small volume of distillate while blowing about 10,000,000 cubic feet of sweet gas daily from Delaware sand at 5041-63 feet. Machine has been moved in to replace equipment damaged by fire. Plans are to kill the gas flow and deepen. The gas yield is above normal for the Delaware, and has enhanced prospects of commercial oil production on the structure. Mahres & Slack's Wilson 1, 2½ miles outheast, made a small oil producer from the Delaware although 106 feet lower on the structure. The latter was abandoned due to small yield and isolation from market. The drilling of a Delaware test in Loving County is proposed by the Michigan Oil & Gas Company on fee land, PSL Section 15, Block C-26. The company has assembled a 7200-acre block, situated northeast of Pinal Dome Oil Company's failure that showed oil and gas in the Delaware.

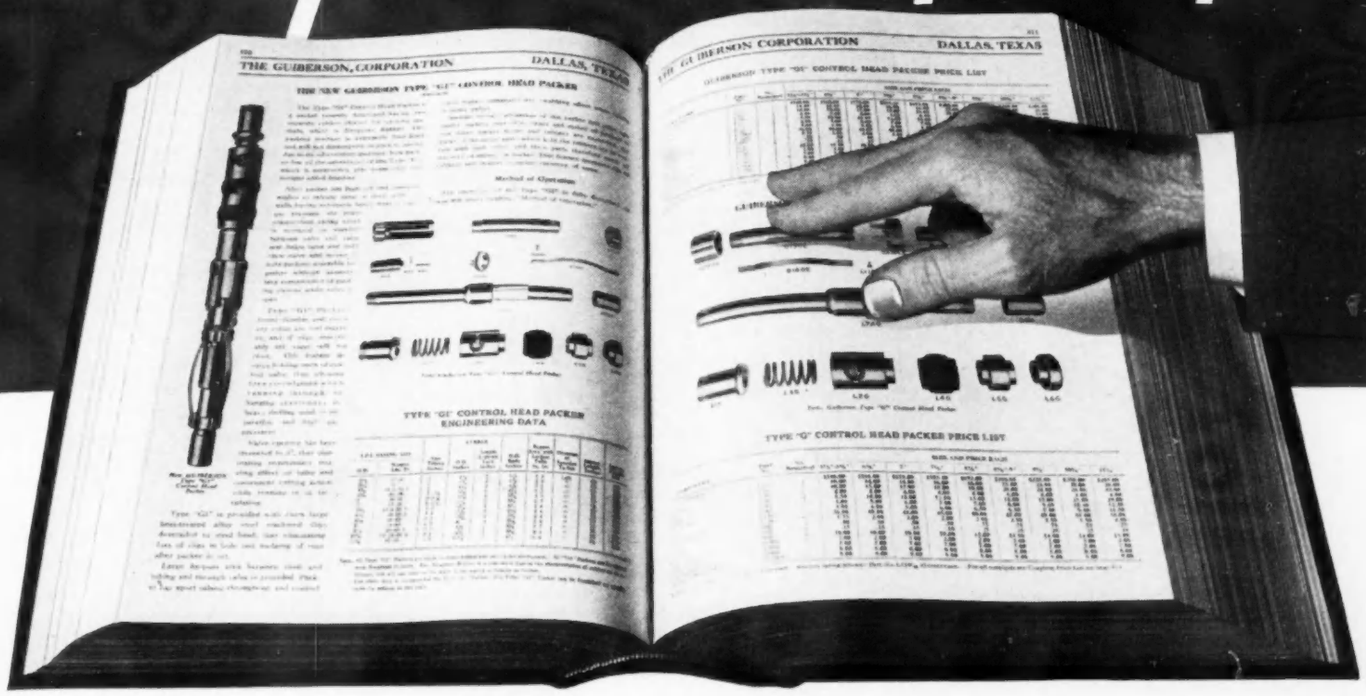
Want combination wells at Long Lake and Cayuga

Carter-Gragg Oil Company has been granted a hearing by the Texas Railroad Commission on an application to complete all its wells in the Long Lake and Cayuga fields as combination oil and gas producers. At a hearing set for May 9, operators will attempt to show why they should be allowed to produce gas through the annular space between the tubing and casing, and oil through the tubing on each well.

Ask 100-barrel allowable for Rendham, Baylor County

A daily allowable of 100 barrels per well for the 10 wells in the new Rendham field, Baylor County, was requested at a hearing before the Texas Railroad Commission last week. The wells

at Your Fingertips



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now have an allowable of 35 barrels daily.

Hall-Jordan Company, represented by William H. McDonald, former land commissioner, presented the application.

Production in the field is from Palo Pinto lime at 3060 feet. The field is located several miles from other wells producing in this horizon. The first well, completed March 29, now makes 70 percent water, but the operator said the proportion of water declines after the well is produced for a short period.

The operator said there is no purchaser for the oil now, and that it is going to storage in lease tanks. Nearest pipe line is 10 or 12 miles distant.

Texas permits

Permits for drilling 334 wells were approved by the Texas Railroad Commission last week, 59 more than were allowed the week before.

Seven locations were approved in the East Texas field, including 2 in Upshur, 2 in Rusk, 2 in Gregg and 1 in Cherokee County. Five permits were granted in the remainder of the East Central Texas area.

Southwest Texas led the state with 84 permits, including 11 in Duval County. Gulf Coast operators reported 38 locations. There were 68 locations approved in the West Texas district, including 25 in Ector and 15 in Yoakum County. Operators in West Central Texas listed 32 locations, including 11 in Shackelford County.

The commission approved drilling 75 wells in North Texas, 18 in Wichita, 14 in Archer and 13 in Young County, while 25 permits were reported from the Panhandle.

10-acre for Lundell

Ten-acre spacing for wells in the Lundell field, Duval County, was provided by the Texas Railroad Commission last week. Wells may be drilled 330 feet from lease lines and 660 feet apart.

Federal petroleum revenues running far ahead of 1939

Revenues from the federal taxes on gasoline, lubricating oil and pipe-line transportation during the first quarter of 1940 were more than $6,000,000 ahead of those for the first three months of 1939, it was reported last week by the United States Internal Revenue Bureau.

March collections from the tax on gasoline totaled $14,909,663, nearly $3,500,000 under the $18,392,569 reported for February, but $330,000 above the $14,577,873 of March last year, bringing the total for the quarter to $52,530,561, more than $5,000,000 above the $47,434,829 of the same period a year ago.

Lubricating oil tax collections for the month were $2,074,041, which was under both the February figure of $2,636,430 and the March, 1939, revenue of $2,169,637; but the total for the quarter was $7,325,939 against $6,498,085 last year.

Pipe-line transportation paid taxes amounting to $1,032,149 for the month, slightly above the $1,009,275 of February but well over the $968,041 of March of last year, and the total for the quarter was $3,091,067, compared with $2,854,163.

Photographic Salon planned for Petroleum Institute Meet

Plans for a Petroleum Industry Photographic Salon, sponsored by the Photographic Society of America, have been announced by the American Petroleum Institute as a feature of the organization's twenty-first annual meeting scheduled for Chicago, November 11 to 15.

The Salon, to which photographers throughout the country have been invited to submit pictorial prints, will have as its subject, "The Petroleum Industry," and will be open to the public in the Antique Lounge of the Stevens Hotel from November 9 to 15.

The project represents a joint effort of the institute's committee on public relations and the Photographic Society of America to encourage the use of pictorial photography in presenting and interpreting modern life. The petroleum industry was selected as the subject of what the Society proposes to make a series of industrial pictorial salons because of its importance to present mechanized civilization, the extent of its operations, and its picturesque equipment, pictorial photographing of which is regarded as a test of artistry and skill.

Members of oil company camera clubs have been invited to submit prints for judging by the Jury of Selection, which is comprised of Dr. D. J. Ruzicka, Robert A. Barrows, and Edward Alenius. Closing date for receiving prints is October 15, and it is expected the judging will be undertaken about October 20. Entry blanks and information are available from F. Quellmalz, Jr., Salon Director, Room 2040, 50 West 50 Street, New York.

An advisory committee representing institute and society will award 4 honors and 10 honorable mentions to prints outstanding among those selected for hanging.

Members representing the institute on the committee are John C. Day, Western Petroleum Refiners Association, Tulsa, chairman; K. E. Cook, Standard Oil Company of New Jersey, New York; C. C. Herndon, Skelly Oil Company, Tulsa; Leonard Timbs, National Supply Company, New York; Eben Griffiths, Socony-Vacuum Oil Company, New York; Robert Y. Ritchie, photographer, New York; Philip C. Humphrey, The Texas Company, New York, and Victor H. Scales, of the institute staff.

Members representing the society are Don Loving, Chicago Art Institute, Chicago, chairman; Dr. L. L. Handly, Houston; Frank Liuni, president of the society, New York; John P. Mudd, Philadelphia; Victor Overman, Corvallis, Oregon; J. S. Rowan, Baltimore; George Slade, Chelsea, Massachusetts; Sidney S. Smith, Shell Oil Company, St. Louis, and Quellmalz.

Ask to raise tubing in East Texas wells

A hearing has been scheduled by the Texas Railroad Commission for May 15 on an application for revising East Texas field rules to permit raising tubing in the wells. Operators who filed the application argue that it might be possible to skim oil from the water and reduce water/oil ratios materially.

North Texas

Archer County test misses Ellenburger, deepening

Wichita Falls.—An unusual geological condition was uncovered in northeastern Archer County when Walter Gant et al's Vogtsberger 1, Block 3, German Emigration Company Survey, missed the Ellenburger section in drilling into Cambrian near the 5200-foot level, and was drilling dry lime at 5320 feet. Top of Bend lime, projected pay zone, was called at 5118 feet. It is ½ mile northeast of Fain-McGaha Oil Corporation and Humble Oil & Refining Company's Fuller 1, a 5159-foot failure that showed small volume of free oil in Bend at 5109-36 feet. Vogtsberger 1 is the first test in the general area to reach the Cambrian.

Development of the record-depth oil producing area opened in the Ringgold sector, northwestern Montague County, by W. B. Omohundro et al's Seay 1 last March from Bend at 5693-5704 feet, has increased to 3 operations Fain-McGaha Oil Corporation's Spring 1, a west offset, was starting up, and British-American Oil Producing Company's Martin 1, ½ mile north of the well, was the first to get underway. Gulf Oil Corporation is the latest entrant, having located Worsham Estate (Spring) 1, a southwest diagonal offset to the discovery. The latter is on the eastern-most tract out of 7211 acres purchased from Walter Gant for $487,500 cash, which the Ardmore operator carries for ⅛ over-riding royalty until Gulf Oil Corporation amortizes its original purchase price and development costs, then the property will be operated on a 50-50 basis. Gant retained full interest in the 7 Strawn producers in the original Worsham pool.

Sinclair Prairie Oil Company's Doty 1, west offset to its Bend lime discovery at Bonita, Montague County, entered the Ellenburger dolomite at 5820 feet. No shows of any consequence were logged in coring to 5950 feet. The company's Howard 2, southeast offset to the discovery, was coring at 5770 feet, having encountered nominal streaks of saturation in the thick Bend section, topped at 5196 feet. Magnolia Petroleum Company's Gilbert 1, northeast outpost, was drilling at 2630 feet.

May Make a Small Well

Ramsey Petroleum Corporation's Magee 1, wildcat near the southeast edge of Montague townsite, entered the Bend at 5770 feet and was drilling shale at 6020 feet. Walter Gant and Continental Oil Company's Brown 1, southwestern Montague County wildcat, is credited with having filled 3000 feet with oil and later made a few

heads after reacidizing with 6000 gallons through casing perforations at 6070-6145 feet opposite Bend saturation. This test has been treated with an aggregate of 31,000 gallons of acid by stages, although some of the treatments were voided by defective plug-back work. Completion of a small oil-producer is in prospect.

United Producers Company and Continental Oil Company's Rex 1, indirect offset to a producer on the southeast edge of the Bowers pool, eastern Montague County, missed the 3 oil zones and abandoned in granite at 3994 feet. In the Nocona deep field, Ramsey Petroleum Corporation et al's Loring 1, ½ mile south of production, logged top of Mississippian lime at 6220 feet and was drilling lime and shale at 6760 feet. This outpost is 537 feet lower on structure than the nearest producer on the Bend lime, topped at 5698 feet.

Shell Oil Company's Davis 1, south offset to the Burns-Browning pool, Clay County, Strawn lime discovery, eliminated the Bend as a potential oil source in yielding 4700 feet of salt water when drill-stem test was made at 5482-5501 feet. It was deepening below 5720 feet to test the Ellenburger. Shell Oil Company's Henderson 2, south offset to the discovery of the Shell-Henderson pool, southwestern Clay County, cemented 4½-inch pipe at 3539 feet, with hole bottomed at 3551 feet. It will try for a completion in the discovery pay, having cased off favorable oil saturation at two upper levels in the Strawn. Continental Oil Company et al's Avis 1, west offset to the Jolly pool discovery, gauged 44½ barrels of 43-gravity oil on 3-hour gauge through ¾-inch choke after using 8000 gallons of acid in Bend at 5365-95 feet.

Walnut Bend Failure

Second failure for the Walnut Bend field, Cooke County Strawn pay area, was indicated by Sinclair Prairie Oil Company's Hudspeth 1, southwest edge of production, in drilling below 5450 feet. The two regular pays carried water. The company's McGeorge 11 flowed 602 barrels initial from Strawn saturation at 4842-65 feet and 4926-65 feet. Marshall et al's Stark 1, 5 miles north of Gainesville and on a geophysical prospect farmed out by Sinclair Prairie Oil Company, was drilling at 4800 feet, having failed to produce in the Strawn.

The important deep lime areas in North Texas received substantial cuts in production allowable, effective May 1. The K-M-A field was reduced to 33 barrels base allowable per well and a similar quota was assigned the nearby Hull-Silk field, Archer County. The Consolidated pool, Wilbarger County, and the Nocona deep area were each reduced 10 barrels to 90 barrels daily, while the Walnut Bend field was cut from 73 to 66 barrels.

Completion test was underway for Magnolia Petroleum Company's Thom 3, prospective Ellenburger producer for the Archer County portion of the K-M-A field. Situated 1⅝ miles southeast of the only Ellenburger producer in the field, Thom 3 flowed oil when formation tester was used at 4415-23 feet. Telescope string of 5½-inch and 5-inch casing was cemented at 4415 feet. Falls Refining Company's Tidwell 1, which indicated a small well in the regular Strawn, was deepening to the new oil level.

Amerada Petroleum Corporation's Goodpasture 1, prospective oil producer from the Canyon and Strawn levels in the Doans Crossing area, northwestern Wilbarger County, was drilling at 5315 feet in shale and lime with the Ordovician as its next objective.

Plains area test gets granite; new tests underway

Wichita Falls.—The sparsely explored Texas plains country between the Panhandle, West and North Texas districts recorded a deep failure that drilled into granite, while a new deep test was started up and another authorized. Humble Oil & Refining Company's Matador Land & Cattle Company 2, in southwestern Motley County and on a 466,525-acre lease block, encountered granite at 8601 feet and quit at 8604 feet. A previous test by the company on the giant leasehold in Dickens County was abandoned in hard lime at 7053 feet.

Humble Oil & Refining Company is to continue deep exploratory work in the plains with a test assigned to a large block in Hall County. Location for D. P. Weaver 1 was spotted in S. P. Section 51, Block 1. In northwestern Childress County, The Texas Company's B. P. Smith 1, a scheduled Ordovician test has landed surface pipe. An earlier test in the area, Humble Oil & Refiining Company's Smith 1 logged Mississippian at 4700-5010 feet, followed by Ellenburger to 5225 feet, where junked hole halted operations.

East Texas

Gregg County test logs Massive Anhydrite high

Tyler.—Roger Lacy's Fee 1, third Lower Trinity test for the Gregg County portion of the East Texas field, registered the highest structural position in logging top of Massive Anhydrite at 6192-6200 feet, and base at 6444 feet, with an elevation of 301 feet. It was drilling at 6490 feet in lower Glen Rose, and is due to reach the Pettit producing zone near the 7100-foot level. Two earlier tests in the area made gas-distillate wells from the Pettit, assuring an abundant supply of high-pressure gas for use in the East Texas field.

Sun Oil Company has two drilling tests in the Chapel Hill deep pool, eastern Smith County. Sanders, a south outpost, was drilling at 1550 feet, and Everhart 1 was drilling at 6360 feet, having missed the gas pay logged in the Paluxy by a nearby oil producer in the north portion of the structure.

T. G. Shaw et al's Wynne 1, projected Lower Trinity test for eastern Kaufman County, logged top of Goodland lime at 4870 feet, and was coring at 4960 feet.

Two wildcats were ordered abandoned after encountering water in the Woodbine. In Cherokee County, Shell Oil Company's Maness 1 was abandoned in Georgetown lime at 4763-85 feet. Ed Parson et al's Davis 1, Henderson County, quit at 4515 feet after entering the Woodbine at 3953 feet.

Southwest Texas

West Ranch further shown to be important producing area

Corpus Christi.—West Ranch, Jackson County, already established as one of the outstanding crude reserves along the South Texas Gulf Coast, was further enhanced in value through discovery of crude production in two Frio sands in an outpost on the west side of production.

Completing as the first producer on the J. M. Bennett Second Subdivision, Renwar Oil Corporation's B. A. Phillippi, Block 25, looms as one of the best wells in the field. It places the field in line for an offsetting program on smaller tracts in this subdivision as well as a possible twin-well development. The discovery is 1800 feet southwest of the nearest producer in the field and is fully 2 miles southwest of the nearest well in the 5700-foot pay. A drill-stem test of sand at 5586-96 recovered 240 feet of oil, 140 feet of mud and 31 pounds pressure in 7 minutes. A test was then made of the lower pay at 5752-59 feet, the recovery being 1520 feet of oil, 90 feet of mud and 130 pounds pressure in 10 minutes. Hole was carried to 5915 feet and casing landed on bottom.

Henshaw Brothers and Atlantic Refining Company's Pauline Blashke 1, San Antonio de Agua Dulce Grant, 1½ miles southeast of the Wade City field, is testing in the Bierstadt sand which was logged at 5088-5103 feet. The well had been carried to 5602 feet. The Jim Wells County wildcat is several hundred feet lower than the Wade City field, bringing rise to the theory that it is new pool.

A number of leases along this trend are at or nearing the expiration stage, so an immediate development campaign is in store to determine the potentialities of the new producing sector. Two tests have been located, one a mile to the southeast and the other one mile to the north of the Blashke test.

Submerged Work

Application has been made to the War Department for a permit to drill a well in the center of Nueces Bay, Nueces County. The test is projected by Stanolind Oil & Gas Company on State lands. The test would be 8000 feet southwest of the East White Point field and approximately the same distance northeast of the Saxet field.

During recent weeks, development in the southern portion of the East White Point field has indicated that the structure is building up in a southwesterly direction, wells in the bay being the highest in the field.

Another submerged test being closely watched is Humble Oil & Refining Company's State D-1, one mile east of the Flour Bluff field and in Laguna Madre, Nueces County. The test, on the down-thrown side of the field's main fault, is projected to at least 10,000 feet. Electric log has been run at 6340 feet late in the week and drilling continued.

On a drill-stem test at 5880-88 feet,

Texas Gulf Producing Company's W. G. Kester Heirs 1, 2½ miles west of the Heyser field in Victoria County, recovered 425 feet of oil, 90 feet of salt water and developed 24 pounds pressure in 25 minutes. It was drilling below 6500 feet. The 5800-foot sand is believed to have correlated with one of the zones in the main Heyser field.

John G. Mayo and Commerce Oil Company were still awaiting orders in T. C. Edwards 1 (2), D. Xira Survey, south of Victoria. The well had been drilled to 6254 feet, ran electric log and took sidewall samples. No show of importance was reported other than a zone just below 5012 feet in which a total of 19 feet of sand were recovered while drilling. A drill-stem test also indicated a possible producer.

San Salvador in Hidalgo to have recycling operation

Mission.—Testing of the gas and condensate reserves is underway preparatory to construction of a recycling plant in the San Salvador field of Hidalgo County by Gulf States Oil Company et al. This company has opened two new sands in the field and will attempt establishment of a third in a 3500-foot northeast outpost. The well is the second for the pool, the first well being completed in a level entirely separate from those tested in the new operation. Cardenas 1 was originally tested in a sand section at 8587-8702 feet, making a large gas well with considerable distillate. Next, it was tested through holes at 8450-62 feet. Now, it is being tested above 8200 feet. In each case, the well has shown fluid of a gravity ranging from 48.8 to 49.6 degrees.

Royal Oil & Gas Company's Chapa 1, at the north end of the Samfordyce field, Hidalgo County, blew out from sand at 3450-55 feet, but was killed and abandoned. It is an old well, formerly drilled to 4026 feet, which was being worked over.

Sun Oil Company was perforating for the third time in the 6400-foot sand to test Rodriguez 1, 2½ miles southwest of the Kelsey field in Starr County. It has shown distillate, water and gas in previous tests. The company's Lehr 1, 8 miles southwest of the Sun field, continued to core, last being below 5370 feet. A gas sand was topped at 5237 feet.

Open new Glen production in southeast Webb County

Laredo.—Gauging 1968 barrels of 21.8-gravity crude per day, Interstate Minerals, Inc.'s Rufino Lopez 46 has opened the new Glen pool of southeastern Webb County. The wildcat found hard sandy shale at 2173-78 feet and oil sand at 2178-85 feet, in the Mirando zone.

The new producer is in Survey 309, 3½ miles northeast of the Mirando Valley field and 14 miles south and east of Mirando City. It is in the vicinity of several failures drilled by O. W. Killam, which may tend to define the producing limits.

This discovery was drilled under contract by Glen Harroun, who had sunk the majority of the operations for this concern in the general area. The company has been active in development of the Mirando Valley field of Zapata County.

Hoffman field, Duval County, got a boost with a four-location south extension. Magnolia Petroleum Company's Weil 9, Section 495, cored the Government Wells pay at 2650-70 feet and on a drill-stem test at this level flowed pipe line oil under 70 pounds pressure in 32 minutes. The hole was cored to the Loma Novia sand at 2776-96 feet, where a test recovered no oil, gas, but 10 feet of mud with no pressure in 30 minutes. Pipe was landed at 2793 feet and perforations will be made in the Government Wells sand for completion.

Sun Oil Company's Garcia 1, Section 407, and 2½ miles east of the Fitzsimmons pool, found a gas sand in the Pettus zone at 4721-34 feet, which showed 550 pounds pressure, then cored a Yegua sand at 4904-16 feet which was being tested as the week closed.

After plugging back from 5710 feet, Taylor Refining Company and R. A. Thompson's Parr 1, Section 298, and 3 miles northwest of the Muralla field, was perforating in the Pettus sand. This zone, showing gas and possibly some oil, was found at 4668-94 feet.

The well previously had tested through perforations at 5480-85 feet, flowing salt water, some oil and considerable gas through 9/64-inch choke under 1440 pounds tubing and 1770 pounds casing pressures. This apparently is in the Cook Mountain formation. Indications of production at this level is of importance as no other well has been completed this deep in the geological section in Duval County.

Luling pumping wells to get reconditioning

San Antonio.—Complete renovation of the leases, installation of new equipment, working over of several of the wells and possibly drilling of several additional tests is in store for the properties in the Luling-Branyon and Salt Flats fields of Caldwell County acquired by Texamerica Oil Company from the Martell Petroleum Company. The latter sold 42 pumping wells with a daily allowable of 543 barrels per day. They range from 2150 to 2750 feet and are in the Austin chalk and Edwards limestone.

Ask increase for Conroe

Members of the Conroe Operators Association appeared before the Texas Railroad Commission last week to ask for an allowable increase from 28,000 barrels to 42,950 barrels daily for the remainder of 1940.

The additional production would go to French refineries which have been designed to handle Conroe crude. A representative of Petro Corpo Oil Corporation, New York, declared his company wanted the oil. He said that it had been necessary for France to buy in South America because the oil could not be purchased here.

Operators complained that the wells in the field have an allowable of only 25 barrels daily, and that the deepest producers get only 26 barrels.

Exempt Old Ocean field from shutdown

The Texas Railroad Commission has entered orders exempting all wells in the Old Ocean field from the April 1 shutdown order. Previous orders had exempted all wells owned by Harrison & Abercrombie in this field, as well as some of the company's wells in two other small fields.

Make survey of possibilities of recycling at West Tuleta

San Antonio.—Engineers shortly will commence a survey of the West Tuleta field, Bee County, in anticipation of the construction of a recycling plant in this Carrizo-Wilcox sand producing area. The project would include drilling several more 7500-foot wells and erection of an extraction and recycling unit.

While details are not formulated, the plant likely would be built by interests associated with Anderson-Prichard Oil Corporation and Mills Bennett Production Company. These operators recently completed D. E. Robertson 1 through perforations at 7525-35 feet in the Carrizo zone as a large gas/distillate producer. Casing leak developed and 3-inch pipe is to be run preparatory to resuming tests.

Involves Unit

Should engineers determine a project as outlined is feasible, attempts would be made to unitize the leases and fee ownerships on the block and drill several more 7500-foot holes. In the unit deal, it probably would require the pooling of leases held by Arkansas Fuel Oil Company, Lewis Production Company, Dirks Brothers et al, Heep Oil Corporation, Walton et al, South Oil Company, Humble Oil & Refining Company, Heyser & Heard et al and others.

The same sort of producing method may be required in the new Thomaston field of De Witt County where Atlantic Refining Company completed the first producer in South Texas in the Wilcox sand. It had been perforated at 7855-85 feet and flowed gas and distillate. The gas volume likely will be too high to produce regularly. Other wells are planned in the sector to determine the producing possibilities of the structure. Should distillate be the only source of production, it may be expected that a a recycling plant will be built.

In Live Oak County, Edwin M. Jones was reperforating in the 7600-foot Wilcox zone in George West 1-A. Through perforations at 9485-9516 feet, the well developed salt water. The new level to be tested is 150 feet below the top of the formation and corresponds closely to the levels in which showings were found in other wells in the trend.

Webb County

Sinclair Prairie Oil Company's Callaghan 1, northeastern Webb County, was going ahead below 8600 feet to be carried to at least 9500 feet. It is supposed to have gone through the Wilcox section. Preparations are being made to move in rig for Tide Water Associated Oil Company's Bruni 8, 9500-foot test for the Bruni field of Webb County. Carter-Rubsamen's Houston Oil Company 13, at Carolina, Texas, is fishing at 5104 feet. It is a deep test for that field.

In the Pettus field, Bee County, Union Producing Company's Ray 56, after plugging back from 8990 feet, was testing in the Pettus sand topped at 3920 feet. Humble Oil & Refining Company's Welder 1, 3 miles northeast of Nursery in Victoria County, was drilling below 5715 feet. Colorado County's Wilcox-sand prospect was making hole below 8000 feet. It is Shell Oil Company's Plow Realty Company 1.

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Texas Gulf Coast

Wharton County test provides new field

Houston.—H. C. Cockburn's Leveridge Estate 1, on East Bernard prospect, Wharton County, opened the district's second oil field for 1940 when it flowed 100 barrels of 55-gravity oil daily through 11/64-inch choke from perforations at 8074-89 feet. Production is from a broken section of Cook Mountain sand. Operators were installing heavier flow valve, separators and storage as the well, which came in without washing, cleaned slowly. Tubing pressure was 3100 pounds and casing pressure 2150 pounds.

Hockleyensis was encountered at 6060 feet; Cockfield at 7000 feet; Dy at 7240 feet; Ey at 7270 feet; and Crockett at 7770 feet. Surface pipe, 10¾-inch, was set at 805 feet; 5½-inch casing at 7900 feet and 4-inch at 8154 feet. Operators planned to abandon the hole at 8007 feet, until geochemical analysis of cores and cuttings showed the well to be near possible production and encouraged drilling another 300 feet. Sidewall cores recorded shows at 7952 feet, 8062 feet, 8088 feet and 8117 feet. Prospect was discovered by Sterling Oil & Refining Company, whose Janik 1 found several shows but was abandoned because of mechanical difficulties. Cockburn later reworked the structure by reflection seismograph. Production test will be closely watched as the strike also registers a new sand.

Indication of the third new oil field for the district was given when Standard Oil Company of Texas and Salt Dome Oil Corporation's State 61-54, east of Cedar Point and 12 miles south of Anahuac in Galveston Bay, Chambers County, cored 30 feet of oil sand in the Hackberry zone of the Lower Frio at 9538 feet. Pipe was set at about 9200 feet for a production test. This prospect was found several years ago when the operators carried on extensive geophysical work with reflection seismograph in the bays of Chambers and Galveston counties. Other major leaseholders in this area are Humble Oil & Refining Company, Gulf Oil Corporation and Tide Water Associated Oil Company. Noble Drilling Company was the drilling contractor on the test.

Wallace & Jordan located Dodd 1, wildcat in Cyrus Cambell Survey, Grimes County, a mile east of Singleton. The structure, a Jackson inlier with closure against a fault, was found by surface geology. Same operators were drilling W. M. Hobson et al's Highland Farms 1, wildcat in the Highland area, Harris County, below 5051 feet in shale after topping Discorbis at 4600 feet and Heterostegina at 4917 feet. Frio sands will be cored.

Jack Frazier will drill Fletcher Lumber Company 1 in E. Thompson Survey, Tyler County, 1½ miles east of Republic Oil Corporation and Houston Oil Company's recent Cockfield sand discovery at Spurger. Regardless of showing in Cockfield, operator announced the test would go to Wilcox, expected at 7600-7700 feet.

Jack Hutchin et al's Borden 2, discovery at Mackey, brought in in January gauged 109 barrels of 24.6-gravity oil daily through ⅛-inch choke during potential test. Production is from Frio sands at 4771 feet. Gas/oil ratio was 389 to 1 and tubing pressure 650 pounds, with casing sealed off. This discovery, first for the Texas Gulf Coast during 1940, made 18 barrels a day on initial test.

W. M. Hobson's Highland Farms 1, wildcat in Highlands area, Harris County, was coring below 5370 feet in shale after topping Frio at 5185 feet. Core from 5304-14 feet carried 8 feet of sand and 2 feet of shale, with gas showings in the sand, which held salt water in the lower 2 feet.

Stanolind Oil Company's Keith & Dowlen 3, Williams Survey, Jefferson County, was running oil and wash water into pits through ¼-inch choke at 5380 feet. Tubing pressure was 490 pounds and casing pressure 475 pounds. Standard screen was run on 5379 feet of 5½-inch casing.

Stanolind Oil & Gas Company and Amerada Petroleum Corporation's General American Life 1, Wadsworth area wildcat, Matagorda County, was drilling below 9619 feet after coring a thin distillate sand at 9614 feet. Casing was set at 8001 feet. First Discorbis was logged at 6110 feet, Heterostegina at 7190 feet, round Marginulina 7400-30 feet, flat Marginulina at 7520-50 feet, and M-7 at 7670-7700 feet.

Selman Oil Company made a drillstem test at 5900-63 feet in Fulberg 1, wildcat, Washington County, and recovered 1800 feet of salt water in 20 minutes, using ¼-inch chokes. Depth is 6001 feet.

J. T. Driscoll's Williams 1, north outpost to the South Houston field, Harris County, reportedly cored 75 feet of oil sand in the Frio. It was drilling below 5010 feet in shale.

Kirby Petroleum Company set surface pipe on Harbaugh 1, Dorsett Survey, in the North Houston area of Harris County. Pat Rutherford is drilling contractor.

The Texas Company will drill Pierce 1, wildcat in H&GN Survey 1, Abstract 209, Blessing area, Matagorda County. Contract depth is 9200 feet.

Rowan & Nichols' Hubbard 1, wildcat on North Liverpool prospect, Brazoria County, was drilling in shale at 7220 feet. The Texas Company's Taylor 1, Sugar Valley wildcat, Matagorda County, was deepening in shale at 8890 feet.

Glenn McCarthy's Bailey Prairie wildcat, Carter Survey, Brazoria County, was drilling in shale and lime at 9530 feet. This operator's Yocum 1, at Angleton, was drilling plug after squeeze cement jobs at 10,510-512 feet, and at 10,388-390 feet.

Showing location (near center of map) of East Bernard in Wharton County.

Ask boost for West Orange

Operators in the West Orange field, Orange County, have asked a daily allowable of 70 barrels per well for each of the 45 wells in the field. The allowable now is 44 barrels per well.

The Texas Railroad Commission called a hearing to consider an increase for one well, and subsequently expanded the notice to include all operators and all wells in the field.

Gulf Oil Corporation said that it would accept its share of the oil in the field, but Sun Oil Company, which likewise purchases there, was not represented at the hearing.

Louisiana Gulf Coast

Happy town test may open new sand for field

Lake Charles.—South Louisiana activity was routine. Two extensions were recorded and one well was bidding for a sand discovery. Two recently found fields were confirmed by potential test, and several operators staked locations near late discoveries.

At Happytown, Iberville Parish, Shell Oil Company was coring in oil sand at 9806 feet in Schwing Lumber Company 1. If completed in this horizon, the test will open a new sand for the field. The company's Iberville Land Company 1, field discovery, was completed for 374 barrels of 39.3-gravity oil in Oligocene sand at 8758 feet.

The California Company's Delta Minerals 1, Stella discovery, Plaquemines Parish, gauged 250 barrels of fluid, 10 percent salt water, through 39 perforations at 9963-74 feet on 3/16-inch choke. The wildcat opened South Louisiana's eighth new field for 1940. The company staked Delta Minerals 1, Lease 5, Section 2-15s-24e.

The Texas Company's Vermilion Parish School Board 1, Erath discovery, Vermilion Parish, tested 70 barrels of 40.3-gravity oil. North 4900 feet of the discovery, Nicklos Drilling Company, contractor, was drilling Strake Petroleum Company's Caldwell 1 below 1600 feet. It will be taken to the 11,400-foot level productive at the field opener.

Humble Oil & Refining Company foreran an active campaign in the Bayou Des Glaise field, Iberville Parish, by skidding rig 26 feet north of the discovery to drill Wilberts B-3 from the same piling as Wilberts B-2. Wilberts B-3 will be a directional hole. The strike, made two weeks ago, was good for 336 barrels of pipe-line oil daily from Miocene at 8650 feet.

Venice Extension

Tide Water Associated Oil Company's Buras Levee Board 7, northwest offset to the deep northeast extension of Venice field, Plaquemines Parish, was completed for 375 barrels daily throught 5/32-inch choke. Production was through 235 perforations at 10,493-540 feet. Gas/oil ration was 575/1.

Danciger Oil & Refining Company's Vidrine 2, on the southeast side of Ville Platte, Evangeline Parish, has been completed for 255 barrels of pipe-line oil daily through ¼-inch choke. Production is from the Wilcox at 10,120 feet, with tubing pressure of 1400 pounds and casing pressure of 1650 pounds. This is the company's second well in the area.

Acadia Parish had two wildcat dry holes, one start and two extension attempts. Continental Oil Company abandoned Vincent 1, 2 miles east of Tepetate on Trilby prospect, at 9015 feet with no shows reported. Humble Oil & Refining Company stopped Meche 1, in the Branch area, at 10,000 feet with no shows reported. The company has set conductor pipe at 146 feet on Atkinson 1, South Crowley area wildcat a short distance from several dry holes and one abandoned producer. Humble Oil & Refining Company completed Ohlenforst 8, in North Crowley, for 779 barrels daily through ¼-inch choke from perforations at 8595-8600 feet. Tubing pressure was 1400 pounds and casing pressure 1650 pounds. Jeanerette field, Acadia Parish, was due for two extension attempts as Herton Oil Company's Goussoulin 1, 1½ miles southwest of production, was rigged, and Cajun Oil Company was reported ready to drill a western extension semi-wildcat.

Humble Oil & Refining Company ran a string of 9⅝-inch casing of near-record length, landing it at 10,920 feet in Caldwell Sugars 1, East Labadieville, Assumption Parish. This hole was sidetracked about 1000 feet above present bottom. Only longer string on record for this size casing, 11,632 feet, was run in The Texas Company's State 2, at Horseshoe Bayou, in November, 1938.

New Assumption Parish Test

In the Amelia area, Assumption Parish, Shell Oil Company staked location for Patreaux 1, Section 66-16s-14e. The company has drilled two 11,500-foot wells in this area, which was worked by reflection seismograph in 1939. On the flank of Napoleonville dome, Assumption Parish, Falcon-Seaboard abandoned Simoneaux 1 in salt, topped at 6160 feet. Bottom was at 6496 feet.

Magnolia Petroleum Company extended production at West Gueydan, Vermilion Parish. Hartwell 1, southeast outpost, flowed 150 barrels per day while cleaning from perforations in the 6800-foot sand. Hole was drilled to 7180 feet, with distillate and salt water logged in the lower sands.

Humble Oil & Refining Company abandoned Community 13-3 in shale at 9259 feet. It is one of the deepest wells yet drilled in this area. Sandy shale with oil odor was logged at 9110-20 feet.

Pan American Production Company's Godchaux 1, which opened a new sand at La Place a week ago, was making 50 barrels of distillate daily and a large volume of gas through various chokes.

Chalkley field, Cameron Parish, was extended west by Shell Oil Comapny's Sweet Lake Land & Oil Company 1, which flowed 300 barrels daily through 14/64-inch choke with tubing pressure of 700 pounds and casing pressure of 2000 pounds. Production was from 8900 feet.

Louisiana permits

Seventy-nine drilling permits were issued last week by the Louisiana Conservation Commission. Thirty-one were in North Louisiana, divided among the following parishes: Caddo, 15; Claiborne, 1; DeSoto, 1; LaSalle, 6; Natchitoches, 1; Red River, 1; Sabine, 4; Union, 1; and Webster, 1. The 48 in South Louisiana were in the following parishes: Acadia, 3; Avoyelles, 1; Beauregard, 1; Cameron, 4; Jefferson, 2; Jefferson Davis, 2; La Fourche, 10; Plaquemines, 8; Rapides, 2; St. Charles, 1; St. Landry, 2; St. Martin, 3; St. Mary, 4; Terrebonne, 4; and Vermilion, 1.

Erect 80,000-barrel tank in Tinsley field, purchases log

Union Producing Company is erecting an 80,000-barrel steel tank on its property in the Tinsley field, Mississippi's first oil producing area, as result of a restricted market outlet. Standard Oil Company of Louisiana pegged its purchases to 5000 barrels daily during April, making deliveries to its Baton Rouge refinery in tank cars, and has indicated that runs will not be increased to compensate for new completions. Coastal Refining Company, owner of a refinery at Mobile, Alabama, has been buying 5 cars daily, paying the above company's gravity-scale price, but producers bear half the freight cost.

North Louisiana

Third producer completed in Olla field, LaSalle Parish

Shreveport.—One new oil well and one dry hole were completed last week in the new Olla oil field, LaSalle Parish, bringing to three the number of oil producers in that area. Production is from the Wilcox at 2200-2300 feet.

The new well is H. L. Hunt's (Placid Oil Company) Louisiana Central Lumber Company 11, C SE NE 13-10n-2e, which showed an estimated 200 barrels of oil daily after perforating casing at 2222-32 feet. Four other operations at Olla set final casing and were ready for testing in the Wilcox horizon. Two new locations were made and two operations spudded during the week. The dry hole was E. F. Neely et al's Lizenby 1, NE NW NW 19-10n-3e, southeast of production, abandoned at 2381 feet although a showing in the Wilcox was logged.

While the Olla field has been slightly erratic, its discovery has spurred geophysical and leasing activity along that part of the Angelina-Caldwell flexure. Shell Oil Company secured a 4-month geophysical option on 15,000 acres of Louisiana Central Lumber Company land in 14n-2e, 15n-2e, 14n-3e and 15n-3e, Caldwell Parish. For several months this company has been taking leases in west Sabine Parish and in Sabine County, Texas, on the south flank of the Sabine uplift, and is now curing title on this block that aggregates 75,000 acres. There is no drilling obligation. Shell Oil Company, however, is obligated to start a test on its wildcat block in DeSoto Parish, 11n-15w, before August 1.

On the north flank of the Sugar Creek field, Claiborne Parish, L. E. Ozley's Fee 1, SE SE 32-20n-5w, was completed in the Travis Peak at 5796 feet flowing 215 barrels of oil daily after perforating at 5740-44 feet.

Ohio Oil Company spudded and set surface casing in its 10,000-foot test,

G. W. Taylor 15, Account 1, SE SE 15-23n-8w, in the old shallow Haynesville field, Claiborne Parish.

Northwest of Pine Island, C. T. Cauble's E. B. Darnell 1, NW NW 17-22n-16w, adjacent to the Texas line, which showed for possible production at the 3200-foot horizon at contact of upper and lower Cretaceous, set final casing and was ready for production test.

Arkansas

Smackover lime test staked in Columbia County

El Dorado.— Location for another Smackover lime test that may go to 9000 feet was made last week in South Arkansas. Barnsdall Oil Company's McLendon 1, C SW SW 5-19-18, Columbia County, is 3 miles southeast of the Atlanta field and 5 miles north of the Louisiana line. The test will be approximately ¾ mile northeast of a 5000-foot dry hole drilled two years ago in Section 7-19-18, East Texas Refining Company's Hendrick 1.

There remain at least five more geophysical "highs" found by seismograph in Columbia County yet to be drilled. These are located near the towns of Taylor, Macedonia, Kerlin, Smithland, and south of Warnock Springs. Standard Oil Company of Louisiana drilled a dry hole at Warnock Springs last December, but another test is expected to be drilled about 1½ miles north of the dry hole.

In the Atlanta field, Columbia County, Tide Water Associated Oil Company and Seaboard Oil Corporation's W. T. Beene 1, NE NW 14-18-19, west offset to a recently completed 1½-mile east extension producer, J. K. Mahoney's Emma Riley 1, showed 80 barrels of oil in three hours through ¼-inch choke with casing pressure of 1375 pounds and tubing pressure of 1310 pounds. Total depth is 8165 feet. With elevation of 199 feet, this test topped Smackover lime at 8139 feet and had porosity at 8151 feet. Grady Vaughn's Mahoney 1, C NW NW 13-18-19, east edge test which flowed 50 percent oil and 50 percent water, set cement from bottom 225 feet up the hole, will drill out and re-perforate at the porous horizon in an effort to shut off water.

In the Dorcheat field, Columbia County, Mid-Continent Petroleum Company located H. T. Dickens 1, SW NW 16-18-22. Standard Oil Company of Louisiana's W. P. Sturgis 1, NE SW 1-17-27, deep Miller County wildcat, drilled to 8290 feet. A LaFayette County wildcat, Atlantic Refining Company's Bodcaw Lumber Company, SE SW 29-17-23, was drilling at 7057 feet after a core at 6994-7003 feet showed hard fine sandy shale, the top part having oil odor.

First operation in the Lewisville-Stamps field, LaFayette County, to be completed by any operator aside from the discoverers, East Texas Refining Company and Erwin & Leach, loomed as a producer as A. H. Boswell et al's C. H. Ellis 1, NW SW NE 19-16-23, flowed ungauged after using acid. Casing was set to 3442 feet.

Four drilling permits were issued last week by the Arkansas Oil & Gas Commission as follows: Columbia County—Berkshire Oil Company's H. C. Couch 1, SE SE 22-17-20; Southwood Oil Company's Couch 2, 40-acre tract, SW 23-17-20; Miller County—F. B. King's Philyaw 1, NE SE 7-17-26; Ouachita County—Sam M. Richardson's Goodwin 10, SEc NE SW 32-15-15.

Mississippi

Eleven locations announced in Pickens field area

Jackson.—Eleven new locations were announced last week for the Pickens field, Yazoo County, discovered early in April as the state's second oil field. The Pickens area has one producer and two active locations besides those made last week.

Eight of the new locations were made by Leon Dunn for a series of tests on the H. H. Pepper tract in Section 26-12n-3e, northwest of the discovery. All of Dunn's locations are 1024.5 feet east of the west line of the section and are, respectively, from No. 1 to No. 8, located 330 feet, 990 feet, 1650 feet, 2310 feet, 2970 feet, 3630 feet, 4290 feet and 4950 feet south of the north line of the section. Gholson & Hodge made locations for R. M. Bridgeforth 1 and 2, 330 feet from south line and from west line SE SE 24-12n-3e, and 330 feet from south line and 330 feet west of east line of the section. Exchange Oil Company made location for M. P. Wilburn 1, NE NE 31-12n-3e, which was rigging.

Two new wildcat locations were made. In Scott County, Exchange Oil Company will drill in Section 30-7n-7e, and in Yalabousha County, J. E. Green, of Beverly Hills, California, will drill in Section 23-25n-6e. In Yalabousha County and not far from this new location, Stewart Oil Company, of Tyler, Texas, abandoned Ruth Creekmore 1, 1980 feet south and west NEc 21-24n-4e, at 3100 feet in Paleozoics.

Two new wells were completed in the Tinsley Dome field, both in the north end of the field and both in Section 2-10n-3w, one being an operation of Slick-Urschel Oil Company and the other a well of E. C. Johnston.

Robert Wilson and E. W. Hamilton, reported working for a major oil company, are leasing in 10n-2e, in 12n-1e and in 12n-1e, Yazoo County. E. L. Martin has secured 13,400 acres in Scott County and 2290 acres in Smith County from Bienville Lumber Company. Humble Oil & Refining Company has taken a 20,000-acre block around Section 40-2s-7w, George County, southeast Mississippi. Most of the acreage was secured from Pascagoula Hardware & Lumber Company, and the company has moved a seismograph unit into the area. Humble Oil & Refining Company continues to shoot a block in 9n-1e and 10n-1e, Jefferson County, secured recently from Fred W. Shields.

Whigate Oil Company has made location southeast of Tinsley Dome production for an offset to its recently abandoned Robertson 1, which logged a sand with oil odor at 1690-17-12 feet, topped chalk at 4892 feet, and logged Woodruff sand carrying oil and water

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at 4989-5012 feet. Robertson 2 is in S½ NW SE 20-10n-12w.

Lafayette Wildcat May Deepen

Adams Oil & Gas Company, Houston, is considering deepening a wildcat in Lafayette County, North Mississippi. Z. E. Llewellyn 1, NE NW NW 9-10s-1w, was abandoned several months ago at 4184 feet in sandy dolomitic material.

Love Petroleum Company's Parkinson 1, NW NE 23-9n-1w, Madison County wildcat, shut down at 5327 feet in Eutaw (Blossom), after failing to core an oil sand in the Selma chalk at the level it was logged in February, 1939, by Union Producing Company's Anderson 1, Section 12-8n-1w. Love Petroleum Company's core test at 4357-61 feet recovered black shale, and in a core recovered chalk at 4381-90 feet, top of which was placed at 4378 feet. Elevation of the test is 213 feet.

In Choctaw County, Alabama, Union Producing Company drilled shale below 8600 feet in McCorvey 1, SE SW SW 20-9n-2w, which is being deepened from 7520 feet, the depth record for Alabama.

Michigan

Montcalm County wildcat trying for water shutoff

Mt. Pleasant.—Completions fell to nine, the lowest point for the year, but new starts aggregated 29, including 6 wildcats.

Major interest centered on two Basin wildcats. Belvidere Oil Company and Joe Drury's Huyck 1, Section 31-12n-6w, Montcalm County, was cemented the third time at 3498 feet in the Upper Monroe in an attempt to get a water shutoff from shallower beds. Both gas and oil showed at 3498 feet thru 3000 feet of water.

In Missaukee County, McClanahan & Rowmor's Quist 1, Section 22-21n-7w, was drilling ahead of 3750 feet in a hole full of water, and not expected to reach the Dundee objective, around 3950 feet before week end.

In Southwest Michigan, Strange Oil & Gas Company's Golden 1, Section 31-3n-7w, topped Traverse at 1898 feet and shut down for orders at 1930 feet. Sun Oil Company logged Traverse at 1925 feet on Huyser 1, Section 12-5n-11w, Kent County, and was drilling below 2055 feet.

Twin Drilling Company and Deep Rock Drilling Company's Henderson 1, Section 7-8n-15w, Crockery Township wildcat, Ottawa County, was drilling below 1000 feet. Test is projected to the Upper Monroe and possibly deeper beds with rotary. If carried below 2000 feet, it will establish a rotary depth record for West Michigan, although considerably greater depths have been drilled with rotary in the Basin.

C. L. Maguire's Clark 1, Section 32-16n-2w, Midland County wildcat, was fishing for tools at 4662 feet, after reaming from 3742 to 4600 feet and drilling down side of tools with new hole. If the lost stem and bit are recovered the hole will be carried to around 5000 feet for a Sylvania test.

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Rocky Mountain Fields

Sundance added as Cole Creek field oil horizon

Casper, Wyo.—A new sand discovery for Wyoming was recorded in the Cole Creek field, semi-proved structure in Natrona County, when General Petroleum Corporation's third test of the structure plugged back to get flowing production in the Shannon sand at 4530-70 feet. The well first swabbed better than 20 barrels of 35-gravity oil per hour, and at late reports was flowing an undisclosed amount estimated at better than 600 barrels daily. Located 1¼ miles northwest of the discovery, producing from the Lakota-Dakota series, Government 1-21, CNW NW NW 21-35n-77w, plugged back from 8050 feet where it had tested 100 barrels of fluid with 50 percent water cut at 7950-60 feet and from the Lakota at 8002-50 feet.

A second well on the structure, General Petroleum Corporation's State 1, NW NE SE 16-35n-77w, a mile north of the discovery, drilled to 8707 feet, and abandoned after picking upper water in the Dakota series and in the Sundance. It also had cored excellent Shannon saturation, at 4625-4735 feet.

Approximately 2000 acres are believed to be within probable productive limits. With a 40-acre spacing program, standard Rocky Mountain practice, this would call for drilling around 50 wells to below 4500 feet. Prior to development of Shannon production, the company had planned core-drilling operations to determine sub-surface features with a view toward possible further deep testing.

Geological

The Cole Creek structure, on a secondary line of folding in the Powder River geo-basin, is a seismograph-studied structure. Significant in the development of the Shannon horizon is that on a basinward trend the sand would be encountered at shallower depths in structures where oil production has not been anticipated until deeper placed cretaceous sands were penetrated. The structure is 10 miles north and east of Socony-Vacuum Oil Company's White Eagle Division refinery at Casper. General Petroleum Corporation is a producing and exploration subsidiary of Socony-Vacuum Oil Company.

A deep test to the Madison in the old Torchlight field, Big Horn County, North Wyoming, got underway last week. McDonald & Curtis were moving in cable tools for Orchard 1, SE NW 24-51n-93w. The acreage is owned in fee by the Stanolind Oil & Gas Company and leased by Orchard.

Gus Pograntz, backed by California capital, will drill Clark 1, NW NE 22-19n-104w, a north extension test to the North Baxter Basin field, Sweetwater County, Wyoming. The test will be drilled with Diesel-powered rotary, and operator was moving-in. A week ago, Red Dessert Corporation announced a deep test to the Tensleep, and southeast extension test of the Middle Baxter Basin gas field.

Colorado Operations

Two new wells started in the Lance Creek field, both by Continental Oil Company, Sam Joss 7, CNW SW NE 6-35n-65w, was running rig foundations, and Otto Rohlff 11, CSW NE SE 31-36n-65w, was building rig. A location to get under way this week is Ohio Oil Company's Elizabeth Lamb 14, CSW SE 5-35n-65w, which was drilling below 1360 feet after cementing 10¾-inch surface casing at 300 feet.

In northwestern Colorado, The Texas Company and The California Company were drilling below 2400 feet in Unit 3, NEc NE NE 27-3n-94w, third deep well in the Wilson Creek field, Rio Blanco County.

In northwestern New Mexico, San Juan County, Kutz Deep Test, Inc.'s Davidson 1, CNW NW 28-28n-10w, reamed hole to 950 feet and was setting 12½-inch casing for water shut-off. Test is in the Kutz Canyon gas field. Continental Oil Company spudded Tribal 105, NE SW SW 12-29n-19w, a first report in the Rattlesnake shallow light oil field.

First wildcat development of significance in a 2-year period in Montana, Security Petroleum Company's Johnson 1, CNE NE 23-26n-3e, Genou structure Chouteau County, reported a good show of oil at 2091 feet in the base of the Ellis. The test is checking considerably higher than the original test on the structure which was abandoned without making a conclusive test when it bogged-down in a fishing job. The new test will drill into the Madison to test oil possibilities at the Ellis-Madison contact, a principal oil bearing stratum in Montana.

New Mexico

Fourteen new operations recorded in Lea County

Hobbs.—Lea County recorded 14 new operations last week, including wildcats on opposite sides of the county. The Vacuum field accounted for 6 of the tests, while cancellation of a deal involving transfer of ownership of the Maliamar field discovery block resulted in 3 locations.

Maljamar Oil & Gas Corporation terminated contract made several months ago for sale of 21 wells and undrilled acreage in the Maljamar field to Texas Canadian Oil Corporation. A substantial number of required offsets accumulated while negotiations were underway, and the new work is to be followed by more tests. Cox et al's State 1, C NE NW 20-18s-32e, has rigged up rotary to try for lime production 2¾ miles south by west of nearest production in the Maljamar district. The other wildcat is Ted Weiner et al's Saunders-Humble 1, C NE NE 20-21s-38e, near the northwest corner of Andrews County, Texas. It is 1½ miles south of an abandoned pumper.

Minor extensions to the south and northwest producing borders of the Vacuum field are to be sought by new tests. The Texas Company's State 1-AB is starting up in 6-18s-35e, while Magnolia Petroleum Company is at work on 3 tests on its State Bridges property, and also State 4-J, C NE NE 22-17s-34e.

California

Weber 2 completes at 11,450 feet 37 days after spudding

Los Angeles.—Superior Oil Company completed Weber 2 at Rio Bravo field, Kern County, bottomed at 11,450 feet, 37 days after spudding. Well was drilled with the heaviest equipment ever assembled on a rotary test and total drilling time from date of spudding until oil was turned into the tanks was but one day over the record for the field. Initial production on four-hour gauge was at rate of 1588 barrels of 38.5-gravity oil and 2,010,000 cubic feet of gas through ½-inch choke. Top of Rio Bravo sand was cored at 11,199 feet, water shut-off made at that point, and 267 feet of liner was landed on bottom, 240 feet perforated, and 2½-inch tubing hung at 11,212 feet.

Continental Oil Company abandoned Community 1, wildcat test in Section 12-28-24, Shafter area of Kern County, following three unsuccessful formation tests. Bottomed at 13,028 feet, final test was at 12,635-645 feet. With valve open one hour, a fair blow of gas resulted with 7150 feet of salt water.

In the Semi-tropic area of Kern County, Section 16-26-22, General Petroleum Corporation's K.P.C. 1 wildcat, cored to 2808 feet, encountered sufficient showings to warrant formation test. At 2710-2808 feet, it demonstrated light blow of gas for 15 minutes with 200 feet of mud. Operator was preparing to deepen, with first scheduled objective near 3500 feet.

A northeastern wildcat location has been staked by Amerada Petroleum Corporation in Section 9-19-16, northeast Coalinga district of Fresno County. Location is a mile northeast of production on property of Southern Pacific Land Company.

In this area, the company was preparing to complete Ewing 1-20B, Section 20-19-16, bottomed at 8203 feet in oil sand. Eocene was topped at 8051 feet. Robert S. Lytle completed 35-18F in this area, Section 18-20-16, bottomed at 7909 feet. It flowed 2264 barrels of 30.7-gravity clean oil through ¾-inch bean.

Standard Oil Company completed Mushrush 4, Section 7-27-24, Wasco field, Kern County, which flowed 3590 barrels of 36-gravity oil through ½-inch bean. Well is bottomed at 13,135 feet, with tubing hung at 13,110 feet. Continental Oil Company also completed Meyer 1 in this field, at the rate of 2789 barrels through ¾-inch bean from 13,059-139 feet.

Gibraltar Drilling Company's semi-wildcat, Dasteel 1, Dominguez area, Los Angeles County, cored streaks of oil sand below 7063 feet, and was coring below 7255 feet in sand showing fair cut and odor with streaks of shale.

A second test in the Newhall area of Los Angeles County will be started shortly by R. E. Havenstrite in Section 16-4-17. Roads are being graded to location. British American Oil Company is also drilling a wildcat in this area, Edwina 1.

UNITED STATES WELL COMPLETIONS

Arkansas

Company, Well and Location	Init. Prod. Bbls.	Depth
Franklin County—		
Ozark Nat. Gas Co., Turner 2, 32-10-26	¶8.5	1280
Union County (Urbana)—		
McCressienn Oil Co., Parker 3, 3-18-13	90	3596

California

Company, Well and Location	Init. Prod. Bbls.	Depth
Kern County—(Edison Area)—		
Goodrum & Vincent, S.P. 4	13	105
Wood Callahan Oil Co., Shell 21-1	150	4420
Kern County (Coles Levee)—		
Richfield Oil Corp., KCL-A 78-29	1090	8920
KCL-A 74-32	140	9010
Kern County—Jasmine Area)—		
Premier Extension Oil Co., Well 1	*	3088
Kern County (McKittrick)—		
Mid-State Oil Co., Wellport 1	10	1217
Kern County (Mt. Poso)—		
Ring Oil Co., Rodgers-Jones 6	*	1855
Kern County (Rio Bravo)—		
Superior, Fink 3	1525	11,498
Union, Kernco 32-34	1357	11,470
Kern County (Shafter Area)—		
Continental, Comm. 1	*	13,028
Kern County (Ten Sections)—		
Shell, KCL-B 38-30	No. Est.	8220
Kings County (Kettleman Hills North Dome)—		
Kettleman North Dome Assn., 27-18J	1392	10,916
334-18J	1568	10,905
Standard, 57-3P	299	8325
Los Angeles County (Dominguez)—		
Shell, Reyes 103	600	4250
Los Angeles County (Montebello)—		
J. E. Maybee Co., Monterey 39	58	7790
Standard, Whitehead 6	336	7655
Los Angeles County (Rosecrans-Athens)—		
Thos. Kelly & Sons, McMillen 2	290	7761
Los Angeles County (Torrance)—		
C.C.M.O. Oil Co., Torrance 47	82	4866
Los Angeles County (Wilmington)—		
Continental, LACFCD No. 5	550	3035
General Pet. Corp., P.E. No. 103	17	3430
Union Pacific RR Co., UP 131	246	5297
UP 133	442	4020
UP 135	185	5610
Wilton Oil Co., No. 1 F-55-6	708	3696
Ventura County (Rincon)—		
C.C.M.O. Oil Co., Hobson B-31	300	4055
Hobson A-9	91	6751
Ventura County (Shiells Canyon)—		
Santa Clara Pet. Co., Calumet 15	170	3224
Ventura County (Ventura Avenue)—		
Shell, Taylor 55	480	7052
Tide Water, VL&W 45	1322	9930

Illinois

Company, Well and Location	Init. Prod. Bbls.	Depth
Cass County—		
Cass Comm. Oil Co., Maslin 1, nw se se 2-17n-10w	*	1070
Clay County—		
Pure, Travis 1, se nw 32-3n-8e	22	2866
Clinton County—		
Lacki et al, Hansemann 1, se c sw se 1-1n-1w	1395	2915
J. E. Etheridge, Hoffman 1, lot 24, blk 2, 12-1n-1w	448	2929
Eteridge, Leber 1, lot 9, blk 3	587	2924
Carl Ewing, Wolf 1, lot 7, blk 1, 12-1n-1w	350	2924
E. Frank Jones, Myer 1, lot 8, blk 2, 12-1n-1w	812	2915
Geo. Lilly, Kasten 1, lot 6, blk 6, 12-1n-1w	480	2919
Louis Lilly et al, Brown 1, ne c se 12-1n-1w	437	2927
Smokey Oil Co., Allison 1, sw c nw se 12-1n-1w	1385	2912
Three States Oil, Kissell 1, ne sw ne se 12-1n-1w	528	2917
T. E. Yemm, Allison 1, se nw se 12-1n-1w	350	2910
C. Androde, Marshall 2, blk 2, 13-1n-1w	122	2944
Donald Dev. Co., Thomas 1, lot 5, blk 2, 13-1n-1w	185	2925
Johnson & Burnham, Buehler 1, ne se se se 13-1n-1w	99	2915
Paul Mosebach, Schlarmann 2, sw se se 5-1n-3w	105	2449
Effingham County—		
Central States et al, Rich 1, ne ne sw 28-6n-4w	*	1882
Fayette County—		
Steele et al, Black 1, se ne sw 25-6n-2e	17	1597
Black 2, sw ne sw 25-6n-2e	40	1624
Hammar, Snodgrass 1, ne sw se 34-6n-2e	*	1613
Texas, Chrisman 3, se se sw 30-6n-3e	98	1598
Wright 4, nw se nw 31-6n-3e	161	1633
Zephyr, Smith 3, nw sw sw 31-6n-3e	175	1610
Smith 4, sw sw sw 31-6n-3e	240	1607
Carter, Durbin 20, se nw sw 4-7n-3e	360	1572
Johnson Dr. Co., Arnold 6, cw½ se nw 19-7n-3e	70	1568
Texas, Buff 1, sw c ne nw 31-7n-3e	*	2309
Carter, Hogge 2, se sw nw 1-8n-3e	66	1540
Doty 1, sw se nw 13-8n-3e	312	1518
Durbin 2, se ne ne 23-8n-3e	56	1550
Marion County—		
Hughes Pet. Co., Church 1, lot 7, blk 39, 18-1n-1e	177	2942
Paul Doran, Gambill 1, nw c nw 18-1n-1e	450	2923
G. Oexner, Flanigan 1, nw sw nw nw 18-1n-1e	480	2912
Edward Robinson, I. C. RR 1, se c sw sw 18-1n-1e	125	2932
Texas, Richardson 11, sw nw nw sw 4-1n-2e	168	1841
Frontier Oil, Antioch School 2, sw nw nw se 5-1n-2e	312	3452
Texas, Tate 17, se nw nw 5-1n-2e	2100	1970
Friedrich 12, nw sw se nw 7-1n-2e	567	1851
Murray 2, nec nw sw 7-1n-2e	110	1880
City of Centralia 48, sw nw ne nw 9-1n-2e	120	2097
Altwater 1, sw nw se 9-2n-2e	220	2132
Kingwood-Bell, Shanafelt 4, sw se se sw 16-2n-2e	66	3547
Magnolia, Chitwood 46, nw c ne sw 16-2n-2e	449	3534
Ohio, Young 21, sw c se nw 20-2n-2e	550	3466
Texas, Chapman 22, ne c sw sw 28-2n-2e	1651	3476
Shanafelt 21, nw ne ne ne 29-2n-2e	185	1867
Dunning 13, nw ne se se 30-2n-2e	1900	3414
Wayman 27, nw sw sw ne 31-2n-2e	2400	3369
City of Centralia 49, n½ se sw 33-2n-2e	240	2040
Farthing, s½ ne sw 33-2n-2e	40	2084
Swan-King, Bilek 1, sw sw ne 2-3n-2e	*	2208
Monroe County—		
S. B. Remington, Kolmer 2, nw ne nw 2-2s-10w	34	470
Kiatt, Jacobs 1, c w l of sec 25-4s-10w	*	790
Richland County—		
Pure, Bauman 2, se ne 12-4n-9e	229	2985
Murray 7, cw½ nw ne 6-4n-10e	168	2895
Varner 1, ce½ nw sw 30-5n-10e	1022	2910
Wabash County—		
O'Leighty, Litherland 1, ne nw sw nw 8-1n-12w	120	1561
Mabee, Bump 8, c se ne nw 9-2s-13w	60	2464
Washington County—		
H. Hubbard, Fish 1, sw ne sw 14-ne sw 14-3s-3w	25	1255
Wayne County—		
H. Weinert, Laininger 1, cw½ ne ne 9-2s-7e	456	3278

(Continued on next page)

Summary of Drilling Operations in the United States, Week Ended May 4, 1940

	WELLS COMPLETED							*PERMITS FOR NEW WELLS				
	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total 1940	Total this Date 1939	This Week	Total this Month	Total 1940	Total this Date 1939	Year Total 1939
Alabama	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arkansas	2	1	1	.....	90	69	77	4	4	46	69	223
California	30	27	.....	3	13,421	455	374	26	26	377	355	1,174
Colorado	.....	.....	.....	.....	.....	3	9	.....	.....	.....	.....	.....
Florida	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Georgia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Illinois*	67	60	1	6	24,499	1,213	1,266	76	76	1,357	.....	893
Indiana	4	2	1	1	235	132	45	.....	.....	.....	.....	.....
Kansas	49	37	.....	12	45,795	567	420	40	40	663	442	1,583
Kentucky	7	2	.....	5	124	87	216	.....	.....	.....	.....	.....
Louisiana	37	24	3	10	5,500	539	343	79	79	566	376	1,444
Michigan	9	4	2	3	430	443	414	29	29	429	382	1,419
Mississippi	2	2	.....	.....	1,050	54	1	.....	.....	.....	.....	.....
Missouri	.....	.....	.....	.....	.....	5	.....	.....	.....	.....	.....	.....
Montana	3	3	.....	.....	318	48	37	.....	.....	.....	.....	.....
Nebraska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Mexico*	11	11	.....	.....	4,122	274	220	15	15	251	.....	293
New York	20	20	.....	.....	74	385	168	.....	.....	.....	.....	.....
North Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ohio	22	15	4	3	25,863	265	275	.....	.....	.....	.....	.....
Oklahoma	38	23	2	13	8,844	765	675	35	35	685	693	2,059
Pennsylvania	52	42	9	1	25,173	864	431	.....	.....	.....	.....	.....
South Dakota	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Tennessee	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....
Texas	203	145	4	54	82,456	3,601	3,437	334	334	4,412	3,735	10,269
Utah	1	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....
West Virginia	16	4	9	3	38,364	194	170	.....	.....	127	.....	718
Wyoming	1	1	.....	.....	1,340	51	49	.....	.....	.....	.....	.....
Total this week	574	423	37	114	277,698	10,018	8,628	638	638	8,913	6,052	20,075
Total last week	537	405	13	119	212,737	9,507	8,112	638	2,381	8,275	5,851	20,075
Total this year	10,081	7,376	562	2,143	3,876,670	.....	.....	.....	.....	.....	.....	.....

* This tabulation includes those states where weekly data are available; figures for Illinois date from October 15, 1939; New Mexico from August 1, 1939.
† Includes water-input wells.

United States Well Completions—*Continued*

Company, Well and Location | Init. Prod. Bbls. | Depth

ILLINOIS—Continued

White County—
Superior, Greathouse 1, sw sw ne 4-5s-14w 65 2922
Sun, Greathouse 2, ne sw nw 4-5s-14w 125 2914
Shell, Austin 3, se sw 24-6s-8e..... 359 2538
Gulf, Summers 1, cnw se ne 25-6s-8e 574 2540
J. B. Barnes, Martin 1, cw½ nw sw 7-6s-9e 52 3160
Exchange-Ohio, Rudolph 2, sw ne ne 14-6s-9e ..... ¶7.5 2272

Indiana

Gibson County—
J. E. Sloss et al, Oakland City College 1, nw nw ne se 13-2s-9w.... * 1781
J. E. Amis, Cooper 8, sw nw ne ne 24-3s-14w 160 2525

Posey County—
Roberts Bros., Keck 5, sw ne nw 34-3s-14w 75 2806

Spencer County—
Ky. Nat. Gas et al, Scanahorn 2, se nw 29-7s-6w ..... ¶5.42 913

Kansas

Barton County—
Cities Service, Bitter "A" 5, cn½ ne nw 5-16-13w (OTD 3320).....2059 3320
Shell, Bitter "B" 9, nw se nw se 6-16-13w 2975 3354
Magnolia, Smith 1, cw½ sw se 1-18-11w ..... * 3320
Stanolind, Panning 23, ne se sw 10-20-11w 3000 3284
Derby, State 6, ne swc se 11-20-11w 1182 3292
I. T. I. O. Co., Burchart 3, nw se sw sw 11-20-11w..... 363 3291
Derby, State 5, ne nw ne ne 14-20-11w 15 3295
Crown, Krueger 1, ce½ se se 14-20-12w 72 3364

Butler County—
Adair et al, Hawes 1, nwc sw 7-25-3e ..... * 2816
Thomas 2, sw se se 10-27-7e..... 45 2759
Pechin et al, Hartenbower 1, nwc 16-29-6e (OTD 3257) ..... * 1200

Cowley County—
Shawver, Davis 1, ne nw ne 21-30-4e 681 2793
Gulf, Denning 1, cn½ nw nw 28-32-5e ..... * 3608

Ellis County—
W-K Royalty Co., Hadley 1, se ne se 20-11-17w ..... * 3690
Cities Service, Colahan 11, ne se nw 24-11-17w 3000 3418
Harbar Dr. Co., Schutts 1, cn½ nw ne 32-11-17w 69 3628
Wakefield, Burnett "A" 4, ce½ ne se 1-11-18w 3000 3505

Ellsworth County—
Barnsdall, Stoppel 1, cw½ sw nw 26-16-10w ..... * 3369
Gulf, Loula 1, ce½ se ne 28-16-10w * 3344
Continental, Rolfs 9, ne swc nw 34-17-8w 891 3224
Hollow Dr. Co., Wilkins 1, cs½ se sw 18-17-9w 16 3258
Wilkins 2, cn½ ne sw 18-17-9w..3000 3245

Greenwood County—
Sinclair Prairie, Browning 61, nw sw ne se 19-22-10e 10 2325
Rhodes et al, Bays 2, nw ne nw se 17-23-13e 35 1783
Helldeston et al, Pinon 1, sw nw sw ne 27-23-13e 25 1843
Chambers et al, Dove 1, cw½ ne se 8-28-11e 5 1210
Whittaker et al, Dove 1, sw se se 8-28-11e 24 1224
Reed et al, Dove 1, sw ne ne 17-28-11e 25 1225

McPherson County—
Westgate-Greenland, Reese 1, cn½ nw nw 19-17-1w 1093 2698
Cities Service, Pierson 1, cw½ se se 19-20-5w 3000 3346
Prunty, Jones "B" 1, sw ne se 31-21-1w 648 3290

Rice County—
Continental, Diskey 2, se ne nw 24-18-8w 3000 3184
McBride, Hodges 2, cn½ ne ne 25-20-6w 1720 3341
Gulf, Drake 4, csl se ne sw 31-20-7w 158 3324
Carlock, Renolett 2, nw se ne 36-20-8w ..... * 3377
Garden et al, Hauschild 3, cs½ se se 15-21-7w ..... * 3430

Russell County—
Davis, Gaynor 4, cn½ se nw 19-13-14w 3000 3170
Stanolind, Rein 4, cs½ sw nw 25-14-14w 704 3233
Skelly, Driscoll 1, ce½ ne sw 27-14-14w 1514 2979
Billings Hernel 5, nw ne nw 35-14-14w 2254 3177
Southern Inc., Berrick "A" 1, cs½ sw se 6-15-13w ..... * 3290
Sinclair Prairie, Sellens 2, ne sw sw 15-15-13w 1391 3333
Coralena, Dumler 8, nw sw nw 36-15-14w 161 3339
Gulf St. Aubyn 1, nec 1-15-15w... 48 3224

Sedgwick County—
Sunray, McMillan 1, cw½ nw nw 14-29-2w ..... * 4055

Stafford County—
Champlin, Smith 1, nw sec ne 17-21-11w 612 3424
Deep Rock, Turner 3, cn½ sw sw 2-24-11w 3000 3765
Stanolind, Hullman 2, ce½ se ne 10-24-11w 3000 3797

Trego County—
Trigg et al, Rosek 1, c ne ne 13-12-23w ..... * 4209

Kentucky

Daviess County—
C. E. Daugherty, O'Flynn 4..... * 1275

Henderson County—
Sun & Ky. Nat. Gas, Trigg 3..... 104 2629

Ohio County—
Joe Williams, Moore 1..... * 780
T. M. Caley et al, Hines 1..... * 1197
John Tuttle, Wimsatt Hrs. 4..... 20 190
C. S. Harmon et al, Tuttle 6..... * 314

Todd County—
Lingerson & Moss, Simon 1..... * 663

North Louisiana

Bossier Parish (Sligo)—
Union Prod. Co., Thigpen-Herold B-2, 19-17n-11w ..... ¶70. 5215

Caddo Parish (Pine Island)—
E. A. Stiller et al, Stiles 2, 28-21n-16w 40 2376
Joe G. Strahan et al, Hart A-3, 29-21n-16w 100 2372
S. S. Alexander, Hart 5, 22-21n-16w 15 1027
L. M. Calhoun, Jr., Tr., Cheshire A-1, 32-21n-15w 10 1552
H. Philip et al, Muslow Oil Co. 1, 31-21n-15w 500 1560
Texas Co., A. Herndon 7, 14-21n-15w 275 1580
Caddo Oil Field Fee 9, 7-20n-15w 110 1508
H. J. Strief, Noel Estate D-1, 12-20n-16w 250 1525
L. & A. Oil Co., Burton 4, 7-20n-15w 80 1528

Claiborne Parish (Sugar Creek)—
L. E. Olzey et al, Fee 1, 32-20n-5w 215 5769

Grant Parish (Urania)—
R. D. Bevill, Jr., Swope et al 1, 18-9n-1e 75 1604

La Salle Parish (Olla)—
E. F. Neely et al, Lizenby 1, 19-10n-3e ..... * 2381

Union Parish (Monroe)—
Memphis Nat. Gas Co., Lankford 7, 2-21n-3e ..... ¶1. 2195

South Louisiana

Bancroft—
Republic, Columbia 17..... * 7878

Chalkley—
Humble, Hanszer 7..... 325 8650
Shell, Sweet Lake Land Co. 1..... 328 8965

Ecla—
Kennedy, Hudson 1..... 470 8578

Gillis—
Rhodes Dr. Co., Nickerson 1..... * 7489

Golden Meadows—
Bateman Dr. Co., Louviere 1..... * 5260
Bennett, Authmont 2..... 64 8605
La Fonte 1..... 153 2675
Martex, Rebstock A-3..... ¶1 2662
Texas, Laterre 5..... * 4026

Lafitte—
Texas, Rigolets 13..... 673 10,176

North Crowley—
Humble, Ohlenforst 8..... 779 8810

Paradis—
Jolley, Matthews 1..... * 11,147

South Jennings—
Stanolind, Landry 1..... * 9638
Morgan 1 ..... 70 9575

Sulphur—
Union Sulphur, Fee 867..... 312 6388

Ville Platte—
Continental, La Central 3..... 183 9072
Opel 7 ..... 58 9087

Assumption Parish—
Falcon-Seaboard, Simoneaux 1, Napoleonville area ..... * 6496

Iberville Parish—
Humble, Wilberts 2-B, Bayou Des Glaise 345 8731

Jefferson Davis Parish—
Union Sulphur, Samson 1, China area ..... * 9602

St. Mary's Parish—
Joe Dominque, Allain 1, West Charenton area ..... * 1630

Vermilion Parish—
Texas, Vermilion Parish School Board 1, Erath area 70 11,762

Michigan

Allegan County—
Chas. Cook, Hazekamp 3, sw sw nw 34-4n-14w 75 1482
L. E. Quade, Scarlett 1, nw se ne 27-3n-16w ..... * 1395

Clare County—
Rowmor Corp., Silvernail 1, sw nw ne 28-19n-6w 160 3899

Kalamazoo County—
R. H. Malcolm, Kinney 1, se se sw 5-4s-12w ..... * 1281

Kent County—
Geo. Kernodle, McKay 1, sw sw sw 19-7n-12w 75 1890
Certain-Teed, Fee 16, ne se se 33-7n-12w 120 1915

Montcalm County—
Belvidere Oil Co., County 1, se nw ne 28-12n-6w .....¶7½ 1322
Evans 1, c sw 21-12n-5w..... * 1253
Taggart Bros., Long 15, c sw 1-12n-10w ..... ¶5 1115

Mississippi

Yalabousha County (Wildcat)—
Stewart Oil Co. et al, Creekmore 1, 21-24n-7e ..... * 3100

Yazoo County (Tinsley Dome)—
E. C. Johnston, Brumfield B-2, 2-10n-3w 500 4810
Slick-Urschel Oil Co., Slick 4, 2-10n-3w 550 4837

Montana

Glacier County (Cut Bank)—
Glacier Prod. Co., Bonnett 4, csw se 4-32n-5w 92 3093
Texas Co., Unit 11 1, cne sw 11-35n-6w 166 3001

Toole County (Kevin-Sunburst)—
Coolidge & Coolidge, Shaw 9, se ne se 35-36n-2w 60 1453

New Mexico

Lea County (Eunice)—
Gulf, State-Ramsey 5, c ne se 35-21s-36e 1200 3860
Texas Co., State-Lieu 21-H, c ne sw 19-20s-37e 144 3860

Lea County (West Eunice)—
Wilson Oil Co., State-Shell 4, c sw sw 7-21s-35e 105 3830

Lea County (Hardy)—
Danglade & Clower, Owens 4, c se sw 34-21s-37e 192 3755
Skelly, Hill 5, lot 3, 6-21s-37e..... 240 3741

Lea County (Mattix)—
Shasta Oil Co., Woolworth 4, ne sw nw 28-24s-37e 300 3594

Lea County (Maljamar)—
Barney Cockburn et al, Miller 6-A, c sw nw 26-17s-32e 304 4023

Lea County (Monument)—
Gulf, State-Graham 3-G, c w½ se se 17-19s-37e 51 3995

Lea County (Penrose)—
Humble, Greenwood 6, c sw se 9-22s-37e 468 3715

Lea County (Vacuum)—
Magnolia, State-Bridges 59 c nw sw 13-17s-34e 134 4670
Texas Co., State 3-M, c ne nw 1-18s-34e 984 4710

New York

Allegany County—
R. B. Moore et al, Curtis Farm, Bolivar 4 1269
Ella M. Murphy Est., Hoover Farm, Bolivar 4 1523
R. B. Moore 6, Daniels farm, Bolivar 5 1359
Messer Oil Corp., Miles farm, Bolivar 9 1390
Ebenezer Oil Co., Emerson farm, Scio 5 1048
Helen Randall, Reid farm, Alma... 10 1343
Bradley Prod. Corp., Monitor farm, Alma 5 1244
Monitor farm, Alma 5 1249
Pure Penn Oil Co., Gowdy farm, Scio 4 1310
Summit Oil Co., Doty farm, Scio... 4 1234
L. H. Thornton et al, Brown farm, Alma 10 1280
Karl-Weller Oil Corp., Karl farm, Genesee 5 1321
B. & S. Oil Co., Jordan farm, Wirt 4 1315

Water (Intake) Wells—
Forest Oil Co., Ackerman farm, Bolivar 1390
Messer Oil Co., Miles farm, Bolivar ... 1369
O. D. Underwood et al, McDivitt farm, Bolivar 1286
Quaker Oil Co., Brown farm, Alma ... 1224
Messer Oil Corp., Courtney Hollow farms, Clarkesville 1325
Courtney Hollow farms, Clarkesville 1336
Willets & Paul Corp., Lot 22, Genesee 1473

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*Address*_____

*City*_____ *State*_____

Burroughs

United States Well Completions—*Continued*

Ohio

Company, Well and Location	Init. Prod. Bbls.	Depth
Cuyahoga County—		
Benedum & Trees, Greenwood 1...	•	....
Hocking County—		
Preston Oil Co., Sunday Creek Coal 1707	50	3566
Jefferson County—		
C. S. Kelly et al, Barnhouse Hrs. 2	2	1300
Licking County—		
George Locknett, Perry 1	¶1.66	2528
Allan Willey, Spencer 1	¶.80	2535
Guy T. Shrider et al, Davis 4	¶.05	576
Medina County—		
E. R. Edson & Sons Co., Brent 5...	50	598
Brent 4	2	539
Thornton Prod. Corp.,		
Sanford & Watson F-14	1	391
Sanford & Watson O-10	1	399
Sanford & Watson O-11	1	397
Sanford & Watson O-15	1	390
Sanford & Watson O-16	1	397
Sanford & Watson O-17	1	387
Sanford & Watson O-23	1	406
Sanford & Watson O-24	1	400
Sanford & Watson F-4	•	400
Monroe County—		
H. B. Walker & Co., Morris 11	•	945
Perry County—		
C. Z. Ruth, Powell 15	5	1174
B. G. Davis et al, Beacham 2	1	3250
Pure Oil, Miller 2	¶1.25	3235
Washington County—		
H. J. Burkhart et al, Burkhardt 4. "I" indicates water input well.	1	2050

Oklahoma

Company, Well and Location	Init. Prod. Bbls.	Depth
Caddo County—		
Ohio, Lackey 7, sw sw se nw 11-5n-9w	1617	3428
Carter County—		
Jones Oil Co., Griffin 3, ne ne nw nw 26-4s-2w	50	2310
Choctaw County—		
Scott et al, Scott 1, se sw ne 28-7s-15e	•	260
Cotton County—		
Hamon, Priddy 2, sw swc ne 3-2s-10w (OTD 2163)	¶25	2260
Creek County—		
Cusack et al, Powell 1, nec 35-14n-9e	5	3120
Grimes et al, Hulton 25, nec sw 8-17n-7e	5	2350
Kirchner, Kelley 1, nw se ne 20-17n-9e	120	2571
Dannenburg, East 1-A, sec ne 36-17n-10e	•	1930
Midco, Bruner 2, swc nw 29-17n-11e	10	1946
Garvin County—		
Winkler, Ellis 2, nw ne ne 32-1n-3w	•	2650
Hughes County—		
Winona, Street 4, se ne nw 21-7n-8e	28	3189
Hahn, Graham 1-B, sec nw 23-7n-8e	•	1108
Jackson County—		
Gulf, Edwards 6, swc se 3-1n-20w..	16	1695
Pendleton et al, Stokes 9, sw nw sw 11-1n-20w (OTD 1406)	•	1653
Lincoln County—		
Summit Dr. Co. et al, Cleer 1, cw½ se sw 6-15n-5e	311	3555
Portable Dr. Co., Teter 1, nwc sw 24-17n-2e	600	4779
Logan County—		
Helmerich & Payne, Kramer 1, nwc se 24-17n-1e	•	4855
McClain County—		
Patsy, Richardson 3, se nw se 9-5n-3e	4000	3616
Okfuskee County—		
Summit Dr. Co., Hilderbrandt 1, ne ne sw sw 18-10n-11e	75	2165
Oklahoma County—		
I. T. I. O., Emerson 12, nw ne sw 30-11n-2w	257	4082
Okmulgee County—		
Jordan, Lasky 2-A, nw nw se se 17-13n-11e	•	3282
Steffey, Anderson 5, ne nec 34-14n-14e	1	1154
Osage County—		
Bowman, 3, ne se ne sw 23-21n-8e..	•	967
Pontotoc County—		
Moday, Kilcrease 2, sw ne nw 7-4n-8e	•	1997
Pine, Randall 2, ne se nw 35-5n-4e	290	2555
Senora, Tucker 5, nw se ne 35-5n-4e	80	2591
Pottawatomie County—		
Pure, Brandenburg 1, nw ne nw 21-7n-4e (OTD 4230)	68	3804
Denver P. & R. Co., Hauck 3, nwc 1-6n-4e	150	3316
Alma et al, Simmons 1, sw se se 28-7n-5e (OTD 4280)	5	3265
Iglehart, Hoer 1-A, nwc se 31-10n-5e	•	4414
Seminole County—		
Big Chief Dr. Co., Collins 1, sec sw 12-6n-5e (OTD 3852)	•	2856
Droppleman, Caesar 1-A, sw nw sw 21-6n-6e	30	3678
Malernee et al, Wood "A" 4, sw ne se 33-7n-6e	1000	2885
Stephens County—		
Buckheart et al, Spears "B" 5, nw sw se nw 15-1s-5w	6	358
Roy Johnson, Florence 1, nw ne sw 2-3s-6w	•	390
Tulsa County—		
King, Hannum 1, ne sw nw 35-17n-12e	¶1.00	714
Wagoner County—		
Sewell et al, Joseph 1, nw se sw 14-17n-15e	•	1132

Pennsylvania

BRADFORD DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Penn Valley Crude Oil Corp., fee..	2	....
C. W. Foster et al, Waters	4	....
Ryder Scott Co., fee	8	....
Hillside Oil Co., Smith	1	....
Forest Oil Corp., 2 wells	2	....
Forest Pet. Corp.	1	....
Niagara Oil Corp., 4 wells	4	....
Bradford Tr. Co., 15 wells	15	....
Water (Intake) Wells		
Pine Run Oil Co., Bing 130-1-2-3-4-6	...	....
Forest Oil Corp.	...	....
Forest Pet. Corp.	...	....
Niagara Oil Corp., 6 wells	...	....

MIDDLE DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Fred Ehret, Dempseytown Gas Co.	¶	....
W. D. & F. T. Barry, Given & Barry	...	6
Water (Intake) Wells		
Cities Service, Hamilton	...	....

BUTLER-ARMSTRONG DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
McCollum & Co., Reefer	¶	....
Willis M. Ruby, McCullough	½	....

SOUTHWEST PENNSYLVANIA

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegheny County—		
Harbison et al, Brown 1	3	1900
R. M. Duden et al, Ross 1	1	2300
Armstrong County—		
Chestnut Ridge Gas Co., Shirey 1..	¶.25	1636
Shelocta Gas Co., Shaeffer 1	¶.14	1556
Penn Wayne Gas Co., Paunch 1	•	3170
Beaver County—		
Geo. Freshwater & J. C. Reed, Laughlin 5	2	850
Clarion County—		
Owens-Illinois Glass Co., Dietrick 1	¶.04	2463
Fayette County—		
Union G. & O. Corp., Conn 829	5	1017
Greensboro Gas Co., Hicks & Holland 1	¶.15	2640
Greene County—		
Equitable Gas Co., Keenan 2	¶.31	1928
Peoples Nat. G. Co., Henderson 211.	¶.12	2000
Indiana County—		
T. W. Phillips G. & O. Co., Spence 2	¶.03	3669

West Central Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Callahan County—		
F. J. Borman et al, Harris 1	•	455
Coleman County—		
Anzac Oil Corp. et al, Morris 6-C..	653	2190
North & South Oil Co., Newton 7..	42	3860
States Oil Corp., Owens 1 (pb to 3650 ft)	37	4376
Joe Worsham et al, Williams 1	•	3735
Jones County—		
Fain-McGaha Oil Corp., Burns 3..	175	1936
Lewis 11	130	1939
Palo Pinto County—		
W. K. Gordon et al, Ringo 4	¶1.5	3575
Palo Pinto County (Wildcat)—		
Francisco & Miles, Mott 1	•	1110
Shackelford County—		
W. L. Baker et al, Ghio 1	•	875
N. Grossenbacher et al, Hickman 4	15	651
J. L. Hart et al, Clausell 5-A	10	535
Meredith & Gant, Hickman 1	•	745
J. P. Ray et al, Harbough 1	8	600
Roark et al, Hickman 5	25	662
Roeser-Pendleton & Continental, Cook 7-A-113	•	1625
Shackleford County (Wildcat)—		
Mollenkonf et al, Jemeyson 1	•	484
Tarrant County (Wildcat)—		
Cox et al, Poole 1	•	212

East Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Joiner Area—		
Lone Pine Oil Co., Pinkston 5	2400	3646
M. H. McMurrey et al, Turner 36 (199-ac)	1200	3787
Turner 37 (199-ac)	1500	2793
Ohio Oil Co., Sadler 1 (20-ac) (input well)	•	3785
Longview Area—		
Coastal Dev. Co., Flewellen 23 (200-ac)	2000	3696
B. F. Phillips et al, Lockett 1 (10-ac)	960	3612
Falls County (Wildcat)—		
City of Lott, Fee 1	•	3300
Franklin County (Talco)—		
Humble, Norman-Prince 7	257	4281
The Texas Co., Barker 12	235	4293
Henderson County (Wildcat)—		
Ed. Parson et al, Davis 1	•	4515
Navarro County (Wildcat)—		
M. M. Johnson et al, Fleming 1	•	1785

West Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Crane County (Gulf-McElroy)—		
Gulf, McElroy 213	633	2957
Crane County (Sand Hills Deep)—		
Gulf et al, Tubb 1-A	5131	5783
Ector County (Foster)—		
Atlantic Ref. Co., Johnson 5-C	1048	4220
Broderick & Calvert, Witcher 20..	1143	4170
Stanolind, Cowden 32-B	501	4197
Sunray Oil Co., Johnson-Landreth 4-C	287	4230
T. P. Coal & Oil Co., Johnson 3	442	4280
Ector County (Goldsmith)—		
Gulf, Goldsmith 268	189	4224
Goldsmith 270	669	4220
Goldsmith 275	748	4239
Goldsmith 276	748	4181
Ector County (Jordan)—		
Atlantic Ref. Co., University 8-D..	1099	3655
Shell, University 3-B	1005	3649
Sinclair Prairie, University 8-79	895	3639
Gaines County (Seminole)—		
Amerada, Sawyer 2	672	5335
Hockley County (Slaughter)—		
Stanolind, Slaughter 9-B	607	5030
Pecos County (Lehn)—		
Robt. E. Mitchell et al, Smith-Shell 1	55	1759
Sahara Oil Corp., Sullivan 13-B	109	1685
Scurry County (Sharon)—		
D. & R. Oil Co., McClure 5	165	2397
Scurry County—		
Coffield & Guthrie, Inc., Reiter 1 pb to 2990 ft)	62	3500
Terry County (Wildcat)—		
Tide Water, Buckner 1	•	5123
Upton County (Gulf-McElroy)—		
Gulf, McElroy 214	5979	2831
Upton County (McCamey)—		
Cardinal Oil Co., Wooley-Shell 22..	45	2119
J. S. Pittman et al, Ricker-Humble 2	112	2310
A. J. Rife et al, Baker-Republic 11	•	2336
Ward County—		
Gulf, O'Brien 131	213	2688
Yoakum County (Wasson)—		
Aloco Oil Co., Keller-Texaco 6	628	5158
Willard 6-B	1443	5247
Amon Carter & Continental, Willard 4	1678	5076
Continental Oil Co., Kendrick 4-868	1474	5120
Don Danvers et al, Anderson 1	610	5236
Deep Rock, Anderson 1	693	5220
Mabee O.&G. Co., Willard 23	846	5190
Magnolia, Mahoney 13	1136	5175
Osage Dr. Co., Willard 2-A	702	5162
Shell, Baumgart 8-A	1087	5170
Baumgart 8-D	1428	5189
Brand 4-A	889	5060
Sinclair Prairie, Kendrick 1-B	151	5125

South Texas

CORPUS CHRISTI DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Brooks County—		
Humble, McGill Bros. 64 (Kelsey)	350	4734
Jackson County—		
Magnolia, West 66-A (West Ranch)	1250	5778
West 69-A (West Ranch)	1000	5129
Phillips, Toney 3 (West Ranch)	1000	5805
Stanolind, L. Ranch Co. 4 (West Ranch)	950	5737
Superior Oil Co., Miller 1, (West Ranch)	•	5782
Jim Wells County—		
H. H. Howell et al, Antonio Perez 1 (WC) Sec 9-N	•	7087
Arkansas Fuel Oil, McNeill 2 (Wade City)	400	4960
Rodney DeLange, McNeill 6 (Wade City)	450	4937
Howell & Hubble, Canales 1 (Premont)	48	2363
Windsor Oil Co., S. Kusel (WC) Casa Blanca Gr	•	5012
Nueces County—		
Southern Minerals Corp., Richard King 8-A (Bentonville-King)	500	5408
Texas Co., Richardson (S. Clara Driscoll)	40	6693
Union Prod. Co., Harvey 2 (Agua Dulce)	¶20 & 200	7700
Wellington Oil Co., Dugger 6 (S. Clara Driscoll)	150	3905
Refugio County—		
Hewitt & Doughtery, Rooke 14-B (La Rosa)	500	5743
Quintana & Humble, P. H. Fagan 2, (Fagan)	75	6055
San Patricio County—		
H. H. Howell, Grabow Est. 1 (McCampbell)	¶10 & 100	7510
O. W. Killam, Taft Syndicate 12 (E. White Point)	500	5680
Republic Nat. Gas Co., Rachal 32 (White Point)	500	5635
Southern Minerals Corp., Carlock 4 (McCampbell)	400	7194
Texas Gulf Prod. Co. et al & Dan Auld, San Antonio Loan & Trust Co. 1 (WC) M. McAuley sur	•	7537

United States Well Completions—*Continued*

Company, Well and Location	Init. Prod. Bbls.	Depth
Tidewater & Sinclair, Ragsdale Bros 1 (WC) Wm. Bell sur	•	7817
Victoria County—		
Gulf, Traylor B-34 (Heyser)	350	5499
E. R. Kirkpatrick, Deavers 2 (Victoria)	•	3341
Duke C. Matthews, Bissett (Victoria)	•	3077
LAREDO DISTRICT		
Duval County—		
Andrus, Reed & Beason, Peters 2-A (Rancho Solo)	•	3077
Continental, Driscoll 48-A (Driscoll)	400	3356
Magnolia Petr. Co., D.C.R.C. 3 (132) (Cedro Hill)	50	1446
Well 47 (496) (Hoffman)	•	2950
Humble O. & R. Co., D.C.R.C. 9-E (Cedro Hill)	50	1430
D.C.R.C. 10-F (Cedro Hill)	50	1443
M. M. Miller & Sons, Miller 22 (Longhorn)	500	4066
Jim Hogg County—		
J. L. Collins & Co., Palacios 1 (WC) sur 287	•	3510
Humble, King Ranch-Colorado 5 (Colorado)	450	3082
Mestina O. & G. Co., 5 (7) (WC)	•	6000
McMullen County—		
Henderson Coquat, Preston Worley (Callihan)	•	1026
Starr County—		
W. R. Davis & Co., Slick Est. B-19 (Rincon)	750	4274
Humble, Montalvo 3 (Sun)	¶20.	5021
Sun, Olivares 7 (Sun)	350	4952
Webb County—		
Harvey & Henderson, Benavides 5 (Volpe)	2	2457
Humble, Yaeger 7 (Adami)	22	996
Yaeger 8 (Adami)	18	1004
Interstate Minerals, Lopez 46 (WC) sur 309 (opens new field)	2000	2185
O. W. Killam, Bruni Est. 65 (Cole-Bruni)	•	3480
Magnolia, Benavides 9 (West Cole)	•	3092
Volpe-Benavides 32 (Volpe)	•	2509
W. C. McBride, Pedro Leal 1 (WC) sur 461	•	2568
V. G. Schimmel et al, Benavides B-2 (West Cole)	47	2363
Zapata County—		
John F. Camp, Hinnant A-1 (Mirando Valley)	•	1868
H. L. Curry, Trevino 12 (Charco Redondo)	•	1505
Interstate Minerals, Lopez 44 (Mirando Valley)	17	1768
J. P. Nash, Haynes 23-C (Comitas)	2	1119
SAN ANTONIO DISTRICT		
Bexar County—		
C. G. Bigby & B. G. Pierce, Winchester Kelso et al 1 (WC) Francisco Rodriguez gr	•	527
J. A. Tarver & W. H. Shireman, Leonard 1 (WC) Manuel de Luna gr	•	1700
Guadalupe County—		
Edger A. Weyel, Thomas 2 (Elm Creek)	•	740
Kimble County—		
E. E. Sorey, Baker 1 (WC) sur 443	•	350

Texas Panhandle

Company, Well and Location	Init. Prod. Bbls.	Depth
Gray County—		
Bradshaw O&G Co., Pope 5	325	3284
Humble, Haggard 12	384	3250
Wilcox O&G Co., Combs-Worley 42	240	3083
Hutchinson County—		
Bob Murphy et al, Whittenburg 8	467	2795
Phillips, Perkins 25	148	2871
Texas Co., Lewis 22	330	3025
Lewis 25	†	790
Moore County—		
Phillips, Shelton 1	¶43.5	3460
Shamrock O&G Corp., Gearhart 1	¶260.	3065

North Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County (Hull-Silk)—		
Barnes & Traugh, Carson 2	1224	4366
Cato Oil Co., Anderson 3	984	4420
Chapman-McFarlin, Wilson 2-F	1128	4180
Helmerich-Payne-Mazda Oil Corp., Finley 4	1200	4301
Bert Ligon et al, White 5-D	150	3920
Moran Bros., Carson 1	1608	4350
Ed. Peterson & McCarty, Wilson-Hall 33-B	432	3756
Pet. Prod. Co., Wilson-McCrory 4	1464	4354
Texas Co., Wilson 39-A	912	4400
Archer County—		
Guy J. Brown et al, Ford 1, (PB to 650 ft)	4	1810
Bert Ligon et al, White 7-D	15	497
White 8-D	24	495
Baylor County (Seymour)—		
British-American O. P. Co., Green 8-D	648	2564
Clay County—		
E. N. Costley et al, Taylor 5-C	193	1090
Perkins-Cullum et al, Taylor 6	104	1087
Clay County (Wildcats)—		
C. J. Bohner et al, Ligon 1	•	1903
L. T. Burns et al, Wolfe 1	•	2444
F. T. Fullwood-S. D. Johnson & O'Conner, Oliver 1	•	4112
Gorman & T. A. Norwood, Taylor 1-B	•	1157
K. B. Hamilton et al, Ramsey 1	•	1200
Clay County (Jolly)—		
Continental et al, Avis 1	356	5395
Cooke County—		
Bridwell Oil Co., Trew 7-A	•	1670
Texas Co., Walterscheid 13	10	745
Cooke County (Walnut Bend)—		
Magnolia, Ramsey 4	632	4843
Foard County (Wildcat)—		
Ohio, Rasberry 1	•	5736
Jack County—		
Trentman & Nunnelee, Showers-Owens 1	384	3326
Montague County—		
Falls Ref. Co., Bouldin 14	9	691
Montague County (Wildcat)—		
R. H. Roark et al, Howard 1	•	1552
Throckmorton County (Wildcat)—		
Paul Steed-E. L. Wilson, Poage 1	•	773
Wichita County (K-M-A)—		
Burk Royalty Co. (was Kimbell-Ross), Birk 1	320	4114
L. T. Burns et al, Waggoner Bros. 25	848	3835
W. H. Hammon et al, McCarty 19-A	680	3900
Hanlon & Buchanan, Inc., Fassett-Tuttle 11-E	399	4006
Kimbell-Baldwin-Reed, Hodges 1	71	4040
Mul-Berry Oil Co., Bradley 3	408	3920

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HOUSTON, TEXAS

United States Well Completions—*Continued*

Company, Well and Location	Init. Prod. Bbls.	Depth
NORTH TEXAS—*Continued*		
Wichita County—		
G. G. Browning et al, Doyle 1	•	600
Shappell Oil Co., Gentry 1	•	1721
Wilbarger County—		
W. B. Omohundro et al, Waggoner Est. 1	14	1141
Young County—		
J. P. Doss et al, Johnson 1	•	623
B. C. Gilmore et al, Watson 5	•	602
A. L. Long-Ray Oil Co., Bills 6	538	2814
Tom M. Miller et al, Richmond 2	4	716
Texas Gulf Coast		
Anahuac—		
Navarro, Deere 4	682	7130
Angleton—		
Humble, Rucks 1	•	lcn
Clear Lake—		
Humble, West Fee C-26	551	5925
West Fee C-37	523	5908
West Fee C-40	126	5910
Stanolind, Sowden 5	35	....
Damon Mound—		
Sinclair Prairie, Woodward 3	15	1562
Dickinson—		
Humble, Frean 8	27	7821
Friendswood—		
Humble, Ruby 2	560	6085
Hardin—		
Sun, Cessna 1	5	7520
Hastings—		
Stanolind, Surface 10	654	6080
Hull—		
Gulf, Hannah 3	607	3976
Farr & Curry, Mecom 1	70	2046
Farr, Baggett 6	486	5805
Lovell Lake—		
Humble, Jefferson Land Company 9	182	7780
Shell, Nelson 2	157	7808
Magnet—		
McDannald, Franz 2	432	5546
Pierce Junction—		
Rio Bravo, Settegast 35-A	20	4042
Segno—		
Gulf, Wing 30	537	8095
Thompson—		
Quintana, Wolters B-11	486	5382
Wolters B-9	550	5431
Humble, Davis 35	516	5408
Gulf, Wolters B-11	113	4322
Tomball—		
Humble and Magnolia, Hirsch 1	¶1.9	5535
Humble, Juergens C-1	25	5568
Fayette County—		
Hines et al, Kerr 1	•	4005
Fort Bend County—		
W. L. Goldston, Hackstedt 1	•	5326
Grimes County—		
L. J. Sessions et al, Barry 1	•	6977
Utah		
Daggett County (Clay Basin)—		
Mountain Fuel Supply Co., Murphy 4, csw se sw 21-3n-24e	¶6.25	5643
West Virginia		
Boone County—		
Pond Fork O. & G. Co., Fee 15	¶.16	4090
Braxton County—		
Pittsburgh & W. Va. G. Co., Carper 7733	•	2072
Cabel County—		
Monickle Gas Co., McCalister 1	¶.15	3424
Calhoun County—		
Creed Yoak, McDonald 2	20	2221
Hope Nat. G. Co., Grogg 1	¶.43	2047
Clay County—		
Pittsburgh & W. Va. G. Co., Ashley 7708	•	1807
Fayette County—		
Northeastern O. & G. Co., Dietz Colliery 4	¶.10	1690
Gilmer County—		
Massey & Jarvis Dr. Co., C. G. Davis 1	¶.03	1143
Lincoln County—		
E. J. Elkins, Pridemore et al 1	25	1475
Putnam County—		
Teavee O. & G. Co., Mess Bros. 1	¶.06	4420
Ritchie County—		
Schultz Oil Co., Hammett 8	10	2050
Pitts. O. & G. Co., Coyle Hrs. 3	¶1.00	1894
Swadley & Shrader, Simmons & Layfield 1	¶.20	2244
Tyler County—		
Neeley Oil Co., Danser Hrs. 1	•	1678
Wayne County—		
Southern W. Va. G. Corp., Pritchard 11	¶.11	3014
Wetzel County—		
Busch & Ferrell, Calvert 1	2	3095
Wyoming		
Niobrara County (Lance Creek)—		
Ohio, Converse Sheep 8, cnw se sw 32-36n-65w	1340	5420
Missouri		
Clinton County—		
King et al, Vanderau 1, se se ne sw 18-55n-31w	¶2	1835
Platte County—		
Missouri Valley G. & O. Co., Brown 3, se sw sw 7-51n-33w	•	1015

•Failures; †Junked; ¶Million cu. ft. gas.

Settle test controversy in North Cowden field

Objections of Broderick & Calvert to Texas Railroad Commission tests of some of their wells in the North Cowden field, Ector County, were withdrawn last week. The commission had sought to test the wells, and the company had refused to permit commission engineers on the property, according to reports reaching Austin.

The commission subsequently ordered Humble Pipe Line Company to disconnect from seven wells on the lease.

Broderick & Calvert brought suit in federal court and on April 27 obtained an injunction forbidding the disconnection. The case was set for hearing before a three-judge federal court on May 4.

Conferences last week, however, resulted in an adjustment of differences, and arrangements were made for commisison tests to begin on May 6. Commission officials understand the federal court suit against Humble Pipe Line Company will be withdrawn.

Hillerbrenner hearing

Operating rules for the Hillerbrenner field, Harris County, will be discussed at a hearing before the Texas Railroad Commission May 9.

LETTERS

DEAR SIR:

I have just rceeived a copy of THE OIL WEEKLY for April 29, 1940. On page 63, in a summary of the argument in the Rowan & Nichols Oil Company case before the Supreme Court, it is stated that I suggested to the Supreme Court that the case was moot. This is a mistake, and not in line with your usually very accurate reports of oil cases, since I argued at some length that the case had not become moot by reason of the issuance of the new order. The suggestion that the case might be moot came from Governor Moody, and not from me.

I enclose herewith a copy of our reply brief, which sets forth on pages 1 to 8, inclusive, our reasons for believing that the Rowan & Nichols case has not become moot. We are planning to file an additional memorandum, which I will be glad to send you when it is completed.

Because of the wide publicity which has been given to this case, I will appreciate it if you will correct your statement of the position taken by me in the argument before the Supreme Court.

ATTORNEY GENERAL OF TEXAS
James P. Hart, Assistant

WILDCAT REPORT
New Starts and Completions

ARKANSAS

FIRST REPORT

Columbia County—Barnsdall's McLendon 1, c sw sw 5-19-18, rig.

CALIFORNIA

Kern County—Goodrum & Vincent's No. 5, sec 31-29-30, Edison area, lcn. Superior's Brandt 1, sec 28-29-26, South Greeley area, rig.

Los Angeles County—R. E. Havenstrite's Lincoln 1, sec 16-4-17, Castaic area, grading road.

COMPLETIONS

Kern County—Goodrum & Vincent's S.P. 4, sec 31-29-30, bottomed 513 ft, completed pumping 13 bbls 12-gr, cut 80 percent, Edison area. Wood-Callahan's Shell 21-1, sec 21-30-29, bottomed 4420 ft, pumping 150 bbls 18.3 gr, cut 0.5 percent through 40/64-inch bean. Edison area. Premier Extension Oil Co.'s No. 1, sec 33-25-27, Vedder 3036 ft, abnd 3088 ft, Jasmine area. Mid-State Oil Co.'s Welport 1, sec 26-29-21, bottomed 1217 ft, pumped 10 bbls 14.5 gr, 4 percent cut, McKittrick area. Continental's Comm 1, sec 12-28-24, bottomed 12,028 ft, perf 12,635-645 ft, 7150 ft salt water, A-2 zone 12,416 ft, Vedder 12,630 ft, abnd.

Ventura County—Santa Clara Pet. Co.'s Calumet 15, sec 3-3-19, bottomed 3224 ft, pumped 170 bbls 30.9 gr, cut 8 percent, through 27/64-inch bean, Shiells Canyon area.

COLORADO

FIRST REPORT

Ouray County—Ridgeway Pet. Syndicate's Bennett 1, cne se 2-45n-8w, 12 mi n of Ouray on Red Mountain structure.

KANSAS

FIRST REPORTS

Ellsworth County—Aylward Prod. Co. et al's Haska 1, cel se se 6-16-10w, dr.

Jefferson County—Kerlyn Oil Co.'s Wise 1, c se sw 28-12-20e, sd 561 ft.

Reno County—Westgate-Greenland Oil Co.'s Schlickav 1, cw½ se sw 8-25-4w, dr.

Rice County—Derby Oil Co.'s Monroe 1, cwl nw se 26-18-9w, plts. Pulse et al's Baker 1, csl sw sw 33-20-6w, dr.

Rooks County—Wakefield et al's Diehle 1, c n½ nw nw 4-9-17w, dr.

COMPLETIONS

Barton County—McMorrow et al's Tonkin 1, swc 4-20-12w, 4 mi w of West Ellinwood pool, Lansing 3158 ft, Sooy conglomerate 3408 ft, Arbuckle 3415 ft, abnd 3430 ft.

Ellis County—Dickey Oil Co.'s Stone 1, cnl ne sw 4-11-17w, 2½ mi e Burnett pool, Sooy 3415 ft, Arbuckle 3528 ft, abnd 3533 ft. Central Pet. Co. et al's Lynn 1, nec sw 14-11-18w, 1 mi sw Burnett pool, Lansing 3150 ft, Sooy 3370 ft, Arbuckle 3450 ft, abnd 3474 ft.

McPherson County—Carlock's Hoyer 1, c se nw 6-21-1w, 1½ mi nw Graber pool, Mississippi 3028 ft, base Mississippi 3325 ft, abnd 3410 ft.

SOUTH LOUISIANA

FIRST REPORTS

Acadia Parish—Humble's Atkinson 1, SEc 26-10s-1e, lcn.

Assumption Parish—Shell's Patreaux 1, Amelia area, NWc 66-16s-14e, lcn.

St. Mary's Parish—Morgan City Oil Co.'s Sugars 1, Charenton area, SEc 33-13s-9e, lcn. Horton Oil Co.'s Gonsoulin 1, Jeanerette area, SEc 68-13s-8e, lcn.

Terrebonne Parish—John Vacarro et al's Plant 1, Schriever area, NEc Rebecca Plantation, 9-16s-16e, lcn.

Vermilion Parish — Strake's Caldwell 1, Erath area, 41-13s-4e, lcn.

COMPLETIONS

Assumption Parish — Falcon - Seaboard's Simoneaux 1, Napoleonville Dome, 43-12s-12e, abnd salt 6496 ft.

Iberville Parish—Humble's Wilberts 2-B, Bayou Des Glaise Area, 78-8s-8e, comp 345 bbl day, 38.4 gr, pref 8648-57 ft.

Jefferson Davis Parish—Union Sulphur's Samson 1, China area, 35-7s-4w, abnd 9602 ft.

St. Mary's Parish—Joe Dominque's Allain 1, West Charenton area, 46-13s-9e, abnd 1630 ft.

Vermilion Parish—Texas Co.'s Vermilion Parish School Board 1, Erath area, 16-13s-4e, dr to 11,762 ft sdtr hole, pb perf 11,373-393 ft, comp 70 bbl.

MICHIGAN

FIRST REPORTS

Allegan County—Fletcher & Lemans' Kolvoord 1, nw sw sw, 21-3n-14w, rig.

Gladwin County—Sun's Cameron 1, c e½ ne se, 10-18n-2w, rig.

Montcalm County—Sun's Whitaker 1, cn½ nw ne 33-12n-10w, rig.

Ottawa County—Regal Dutch Pet. Co.'s Wabeke 1, ne nw nw 12-5n-15w, dr.

Roscommon County—Sun's Hogan 1, cw½ nw sw 6-22n-4w, mim.

St. Clair County—J. C. Gaine's Beach 1, se sw sw nw 32-7n-17e, rig.

COMPLETIONS

Allegan County—L. E. Quade's Scarlett 1, nw se ne 27-3n-16w, Traverse 1347 ft, abnd 1395.

Kalamazoo County—R. H. Malcolm's Kinney 1, se se sw 5-4s-12w, Traverse 1258 ft, abnd 1281 ft.

MISSISSIPPI

FIRST REPORTS

Scott County—Exchange Oil Co.'s Newall Mineral Lease Co. 1, sec 30-7n-7e, mat.

Yalabousha County—J. E. Green's Goldman 1, se ne 23-25n-6e, mat.

COMPLETIONS

Yalabousha County—Stewart Oil Co. et al's Creekmore 1, sec 21-24n-4e, abnd 3100 ft (Paleozoic).

NEW MEXICO

FIRST REPORTS

Lea County—Cox et al's State 1, c ne nw 20-18s-32e, rur. Ted Weiner et al's Saunders-Humble 1, c ne ne 20-21s-38e, mim.

OKLAHOMA

FIRST REPORTS

Atoka County—Holly et al's Johnson 1, nwc ne 36-3s-13e, dr.

Cotton County—Selby O. & G. Co.'s Abbott 1, swc nw 11-5s-12w, dr.

Kiowa County—Marshall's Pottchin 1, ne nw nw 28-7n-18w, dr.

Pontotoc County—Morgan, Flynn et al's Brown 1, swc se 30-3n-5e, rur.

Pottawatomie County—Townsend et al's Jackson 1, sw se nw 20-6n-5e, dr. J. F. Smith's McKown 1-A, se sw nw 25-8n-4e, plts. Elm Oil Co. et al's Evans 1, sec ne 17-10n-5e, dr.

Seminole County—C. W. Titus' Franks 1, swc nw 25-11n-8e, testing at 3120 ft.

COMPLETIONS

Creek County—Bryan Pet. Co.'s Ah-Sey 1, ne nw ne 34-14n-7e, West Arno pool discovery, Prue 2556 ft, td 2652 ft, shot with 190 quarts, 104 bbls 14 gr.

Garfield County—Magnolia's Kring 1, c se sw 12-21n-3w, between Sams and Garber pools, second Wilcox sand 5680 ft, abnd 5750 ft.

Garvin County—Kerlyn Oil Co.'s Butterly 1, nec se 22-1n-1e, 6 mi s Wynnewood, 37 shots 2648-60 ft, otd 5005 ft, pb 3124 ft, 2,600,000 cu ft gas.

Grant County—Continental's Krichmar 1, sec ne 28-28n-5w, 5 mi n Medford, Wilcox 5427 ft, abnd 5509½ ft.

Kiowa County—Spink et al's Spink 1, nec se 11-5n-17w, 7 mi se Hobart, abnd 335 ft.

Payne County—Texas Co.'s Burroughs 1, c e½ ne nw 11-17n-1e, ½-mi w Coyle pool, Wilcox 4925 ft, td 4955 ft, 700 bbls.

Stephens County—Jackson's Marshall 1, se ne ne 1-1s-6w, 2 mi sw Cruce pool, abnd 200 ft.

WEST TEXAS

FIRST REPORT

Crane County—Gulf's University 1-F, nw se se sec 22, blk 31, rig.

COMPLETION

Terry County—Tide Water's Buckner 1, c ne sw PSL sec 3, blk C-37, elev 3219 ft, anhydrite 2140 ft, Yates sand 3030 ft, Yates grains 3040 ft, brown lime 3997 ft, solid lime 4450 ft, abnd in sul w 4977-5123 ft.

WEST CENTRAL TEXAS

FIRST REPORTS

Brown County—C. H. Robertson et al's McGary-Gibbs 1, 160-ac tr, HT&B sec 1, dr 725 ft. S. J. Poteet et al's Williams 1, nec J. F. Roberts sur 470, mach.

Callahan County—E. Johnson et al's Hughes 3, ne sec 127, BBB&C sur, lcn.

Parker County—E. R. Marchman et al's Keeling 1, F. Liddy sur A-829, 2 mi w Springtown, mim.

COMPLETIONS

Palo Pinto County—Francisco & Mile's Mott 1, T&P sec 72, blk 3, abnd 1110 ft.

Shackelford County—L. Mollenkopf et al's Jemeyson 1, sec 489, abnd 484 ft.

Tarrant County—W. L. Cox et al's Poole 1, J. McDonald sur, abnd 212 ft.

EAST TEXAS

FIRST REPORT

Angelina County—K. L. McHenry et al's Redditt-Fairchild 1, 2700 ft, from s 1200 ft from e of T.&N.O. sur 7, 10 mi se Diboll, mim.

COMPLETIONS

Falls County—City of Lott's fee 1, W. Gilmore sur, elev 500 ft, Buda lime 1205-78 ft, Georgetown 1358 ft, Edwards 1520 ft, abnd 3300 ft.

Henderson County—Ed Parsons et al's Davis 1, 81-acre tr, K. H. Douglas sur, 3 mi s Eustace, Pecan chalk 2215-2360 ft, Austin chalk 3105-3505 ft, Sub-Clarksville 3560 ft, Woodbine 3953 ft, abnd 4515 ft.

Navarro County—M. M. Johnson et al's Fleming 1, J. Smith sur, 5 mi se Corsicana, elev 448 ft, abnd 1785 ft.

FIRST REPORT

Sabine County—Charlotte Oil Co.'s Santa Tie & Lbr. Co. 1, Gross sur, 53-ac tr, moving in rig for 6500-ft test.

SOUTH TEXAS

FIRST REPORTS

Bastrop County—W. C. McGlothlin's Bell 1, A. Black sur 35, 2 mi w Sayersville, ru on Edwards lime test.

Duval County—Government Wells Oil Co.'s Lundell 1, sur 364, 6 mi nw Freer, lcn.

Guadalupe County—P. G. Rouse's Feliz 1, 75-ac tr, Viciente Duran sur, lcn.

Jim Hogg County—M. W. Butler et al's Allen 1, blk 12, sur 49, dr 2940 ft. Sun's Thaxton 1, sur 670, lcn.

LaSalle County—R. P. Cooper's Yaeger 1, lot 4, blk 4, sur 53, Louis Yaeger ranch, 2 mi nw Adami fld, dr 350 ft.

Jim Wells County—H. H. Howell et al's Schroede 1, 5000 ft e and a little s Wade City production, 120-ac lse, Casa Blanca gr, Shell farmout, dk.

Nueces County—Southern Minerals Corp.'s Community (Mrs. Henry Bertram et al) 1,

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Refugio County—Norsworthy Prod. Co.'s Holeman 1, Michael Riley sur, 1 mi ne Fagan fld, sp.

Victoria County—British American's Warden 1-B, 40-ac lse, Edward McDonough sur, ab-88, 14 mi sw Victoria, 1 mi se Terrell 1 in 1000-ac blk, prep to mi. Gulf's Keeran et al 18, Martin De Leon sur, ab-74, 1 mi w production in Keeran fld, dr 1825 ft.

Zavala County—H. F. Wilcox O. & G. Co.'s Gilliam 6, G.W.T.&P. sur 12, blk 2-A, 7 mi ne Batesville, set sur csg and woc.

COMPLETIONS

Bexar County—C. G. & B. G. Pierce's Kelso et al 1, 204.3-ac tr, Francisco Rodriguez gr, 9 mi s San Antonio, 5½-inch csg 430 ft, tested sw, abnd 527 ft. J. A. Tarver & W. H. Shireman's Leonard 1, 50-ac lse, Manuel Le Luna gr, 1 mi s Losoya, abnd 1700 ft.

Jim Hogg County—J. L. Collins & Co.'s Palacios 1, blk 19, D. G. Duce sur 387, 1 mi e Randado fld, 10-inch csg 40 ft, Mirando 2300 ft, Pettus 2620 ft, dst 2732-52 ft, rec 15 ft mul, abnd 3510 ft. Humble's Mestina O. & G. Co. 5 (7), electric survey, sidewall cores, abnd 6000 ft.

Jim Wells County—H. H. Howell et al's Perez 1, lot 13, sec 9-N, Cushing O. & G. subd, Manuel Barrera gr, 40-ac tr, 5 mi nw Alice, sd 7033-55 ft, electric survey to 7073 ft, abnd 7087 ft. Windsor Oil Co.'s (R. A. Josey, Inc.) Kusel 1, blk 6, I. Lang subd, Casa Blanca gr, 2 mi ne Wade City fld, abnd 5052 ft.

Kimble County—E. E. Sorey's Baker 1, B. Underwood sur 443, 1½ mi ne Junction, abnd 350 ft & skid over for new test.

San Patricio County—Texas Gulf Producing Co. et al and Dan Auld's San Antonio Loan & Trust Co. 1, 80-ac lse, M. McAuley sur, 3 mi sw Sinton, 10-inch csg, 1028 ft, 5½-inch csg 6724 ft, Angelita 5317 ft, abnd 7537 ft. Tidewater and Sinclair Prairie's Ragsdale Bros. 1, 1094-ac tr, William Bell sur, 200-ac lse, 4000 ft nw White Point fld, 5½-inch csg, 1254 ft, hrd dry sd 7296-7302, abnd 7817 ft.

NORTH TEXAS

FIRST REPORTS

Archer County—J. H. Turner et al's Sadau 1, G. W. Stell sur A-382, dr 615 ft.

Cooke County—John Grey et al's Wyatt 1, 68-ac tr, A. C. C. Bailey sur, 3 mi w Woodbine, dk.

Jack County—E. B. Evans et al's Jackson 1, se se S.P. Ry sur, sec 2, A-2201, lcn.

Montague County—L. S. Youngblood-R. L. Foree's Beasley 1, 200-ac tr, Ben McGaha sur, lcn.

Young County—Commodore Oil Co.'s Clinton Realty Co. 1, TE&L sec 2384, 2 mi nw Murray, lcn for 5500-ft test.

COMPLETIONS

Clay County—C. J. Bohner et al's Ligon 1, blk 70, Byers subd, abnd 1903 ft. L. T. Burns et al's Wolfe 1, blk 4, Specht-McCutcheon sur, abnd 2444 ft. F. T. Fullwood-S. D. Johnson & O'Conner Dr. Co.'s Oliver 1, abnd 4112 ft. Gorman & Ted Norwood's Taylor 1-B, blk 39, Bacon subd, abnd 1157 ft. W. B. Hamilton et al's J. D. Ramsey 1, Jas. G. Hays sur A-183, abnd 1200 ft.

Foard County—Ohio Oil Co.'s Rasberry 1, c sw ne SP sec 26, abnd 5736 ft.

Montague County—R. H. Roark et al's Howard 1, 640-acre tr, F. Robertson sur A-620, abnd 1552 ft.

Throckmorton County—Paul Steed-E. L. Wilson's Poage 1, sec 1611, abnd 773 ft.

TEXAS GULF COAST

COMPLETIONS

Fayette County—Hines et al's Kerr 1, Muldoon area, abnd 4005 ft.

Fort Bend County—W. L. Goldston's Hackstedt 1, H&TC 47, Needville area, abnd 5326 ft.

Grimes County—L. J. Sessions et al's Barry 1, Yarborough area, abnd 6977 ft.

Texas commission sets rules for Wade City field

Twenty-acre spacing for the Wade City field, Jim Wells County, is provided in an order issued by the Texas Railroad Commission last week. Wells may be 330 feet from lease lines, but must be 933 feet apart.

The regulations provide for 850 feet of casing cemented to the surface, and an oil string set with at least 300 sacks of cement. Proration is provided on acreage and per well basis with 75 percent of the allowable assigned on acreage. A maximum gas/oil ratio of 2000 to 1 is ordered.

Pettengill hits Socialism and Cole bill in "Smoke-Screen"

Oil men will find a particular interest in the indictment of collectivism made in Samuel B. Pettengill's new book, "Smoke-Screen," written to demonstrate the United States is moving toward National Socialism and which makes special examples of the oil and automobile industries as being targets of bureaucracy seeking federal control.

For eight years a Democratic congressman from Indiana, Pettengill states that National Socialism in this country has finished tap-tapping at the back door, has made its quiet way through the rear rooms and now has its eye on the master's chair in the living room. He is qualified to discuss oil, having served on the congressional investigating committee of 1934.

Pointing out the beneficient purpose of the free enterprise system, Pettengill declares the oil industry has located more crude oil than required, known quantities unproduced having risen from 7,500,000,000 barrels in 1915 to 18,483,000,000 barrels in 1940, and that amazing progress in refining will permit present reserves to yield five times the amount of gasoline recoverable from reserves in 1915; and through the smoke-screen of a probable scarcity and national defense, National Socialists in Washington, want "leave of Congress (the Cole bill) to tell the industry how to run its affairs."

Enactment of the Cole bill, Pettengill writes, "will give the secretary of the interior not only final absolute power to prescribe all means and methods by which petroleum is produced, but also the power to determine for what purposes petroleum and all its products may be used."

It is declared a matter not only affecting a great industry but one that may fashion and shape the destiny of the nation, for "It is probable that this petroleum bill goes further toward a Nazi America than any legislation on the books," and if it is enacted "there is not a single national resource which cannot be brought within the federal orbit."

Pettengill is author of "Jefferson, the Forgotten Man" and "Hot Oil." His new book, "Smoke-Screen," is printed by Southern Publishers, Kingsport, Tennessee.

Ask allowable increase for Lundell, Duval County

Operators in the Lundell field, Duval County, have requested a minimum allowable of 15 barrels daily for the 65 wells in the field, now allowed 10 barrels per day.

Evidence presented at the hearing indicated that the additional oil could be produced without waste and that Humble Pipe Line Company, the only purchaser, will buy 10,000 barrels daily from the field.

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NOTES FOR THE Equipment Buyer and User

Pipe Threading

WILLIAM K. STAMETS

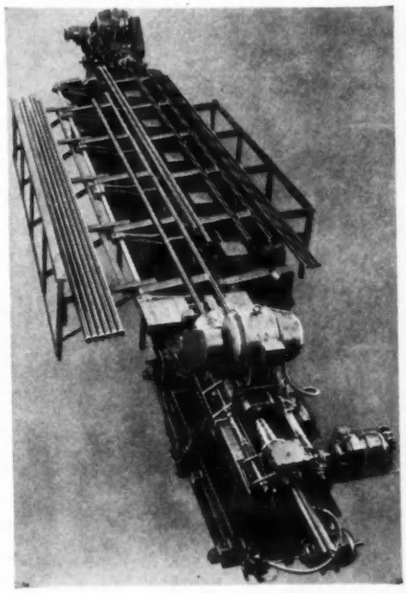
An automatic machine for threading both ends of pipe has been announced by William K. Stamets, Jenkins Arcade Building, Pittsburgh.

The unit consists of two opposed threading machines and electrically-operated mill tables which deliver the pipe to the machines, convey and position it alternately for the two threading operations, and discharge it to the unloading skids.

The threading machines have a non-rotating chuck which holds and aligns the pipe with the die head while the threads are being cut. The rotating die is carried on the spindle supported by the carriage. V-belts and worm gears provide drive to the spindle from an adjustable speed motor. Threading feed is by means of a leadscrew geared to the spindle with provision for change to any desired pitch of thread.

In operation, a load of pipe is placed on skids and allowed to roll down against stops. When the unit is started, the first pipe is picked up and discharged onto rolls which move the pipe against a stop in proper location endwise for threading. The pipe is lifted from the rolls and carried into the machine chuck which closes, and the threading operation is performed. As the threading operation is completed, the chuck opens and the tables take the pipe to the second threading machine, delivering another pipe to the first machine.

The tables, operated by electric motors, are synchronized and interlocked with the threading machines.



Stamets' Automatic Threading Machine

Valves

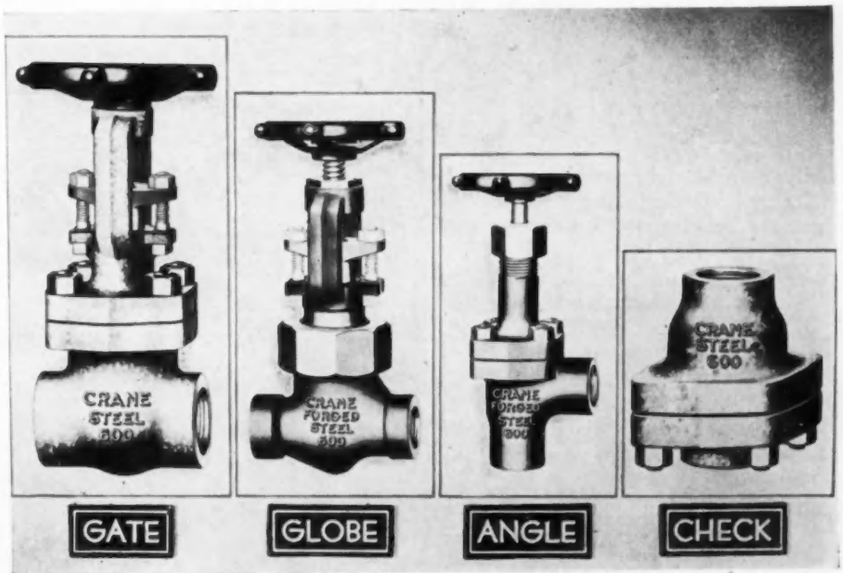
CRANE COMPANY

A new line of small steel valves for steam and oil service has been announced by Crane Company, Chicago. It includes gate, globe, angle, and check valves in sizes from ¼- to 2-inch and includes both inside screw and O. S. & Y. construction, union and bolted bonnets, screwed, socket weld and flanged ends. The line includes 176 styles and sizes.

The gate valves are made of cast steel with O. S. & Y. construction, having union bonnet type in screwed ends in sizes ¼- to ¾-inch inclusive, and bolted bonnet with screwed, socket weld and flanged ends in sizes ½- to 2-inch inclusive. The ½- and ¾-inch are available in both union and bolted-bonnet types.

The globe and angle valves are made of forged steel with both inside screw and O. S. & Y. construction. Inside screw valves have screwed ends with union bonnet in sizes ¼- to ¾-inch inclusive, and bolted bonnet in sizes 1- to 2-inch inclusive. O. S. & Y. valves have screwed ends with union bonnet in sizes ¼- to ¾-inch inclusive, and screwed, socket weld and flanged ends with bolted bonnet in sizes ½ to 2-inch inclusive. The ½ and ¾-inch are available in both union and bolted bonnet styles.

Check valves are made in two types. The horizontal pattern is forged steel with union cap and screwed ends in sizes ¼ to ¾-inch inclusive, and with bolted cap and screwed, socket weld and flanged ends in sizes ½- to 2-inch inclusive. The ½- and ¾-inch are available in both union and bolted cap styles. The vertical ball pattern is cast steel with bolted joint and screwed ends in sizes ½- to 2-inch inclusive.



Crane Company's New Line of Small Steel Valves for Steam and Oil Service

Welding Remote Control

WILSON WELDER & METALS COMPANY

A device for remote control of its Hornet arc welders has been announced by Wilson Welder & Metals Company, 60 East 42 Street, New York. The device is employed by replacing it for the handwheel which governs the control pole of the standard welder.

The control allows minute adjustments in current output by touching one of two contacts on the electrode holder to the ground. The motor revolves only when actual contact is maintained. A 1/80-horsepower electric motor that operates the control pole is protected by two limit switches and by a slip clutch to prevent damage when the end of the range is reached. The generator may be pre-set by push buttons mounted on the control.

Retainer Production Packer

BAKER OIL TOOLS, INC.

A retainer production packer designed to pack off between two production horizons and produce them separately has been announced by Baker Oil Tools, Inc., Box 127, Vernon Station, Los Angeles, California.

Production from the lower zone is through tubing run through the packer; production from the upper zone is through the annular area between the tubing and the liner or casing. When production from three zones is to be kept separate, an additional packer is used.

The packer is furnished in three designs—a packing head-seal type, a continuous double-seal type and a con-

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NOTES FOR THE Equipment Buyer and User

tinuous single-seal type—to meet any specific condition encountered. All types are of the same basic construction but with individual features providing for raising and lowering the tubing to regulate flow and gas-oil ratios, to clean out sand, to wash over, to swab in the different zones or to shut off (temporarily or otherwise) the bottom producing horizon when desired.

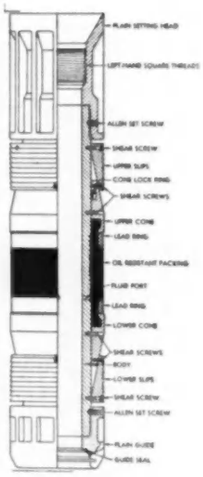


FIGURE 1

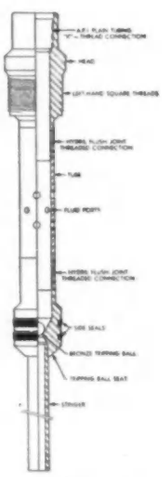


FIGURE 2

Construction of the retainer production packer, packing head-seal type, is shown in Figure 1. It is run into the hole on the Setting Tool shown in Figure 2. At the top of the packer is a plain setting head equipped with left-hand square threads into which corresponding left-hand square threads in the head of the setting tool are screwed. The setting tool is attached to the bottom of a running-in string, usually consisting of tubing, which is made up with an expansion joint a few feet above the setting tool. The packer is run to its predetermined position in the well and is tripped and set to seal off against the liner or casing with an oil-resisting packing rubber between two lead seals. It is prevented from moving either up or down the pipe by two sets of slips.

In setting the packer, a tripping ball is dropped into the running-in string and falls to its seat in the setting tool. Hydraulic pressure generated by pumps at the surface is then applied to the packing member through fluid ports in the setting tool and thence through the fluid ports in the body of the packer. This pressure elongates the packing and causes it to move upward until it shears the screws holding the upper set of slips. Passage of fluid down around the setting tool is prevented by the side seals located below the fluid ports. The running-in string is then picked up to set the upper slips

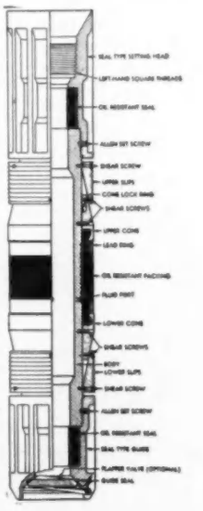


FIGURE 3

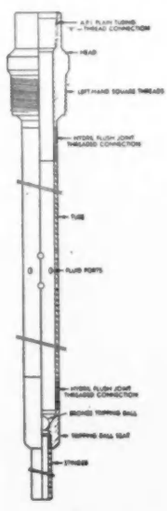


FIGURE 4

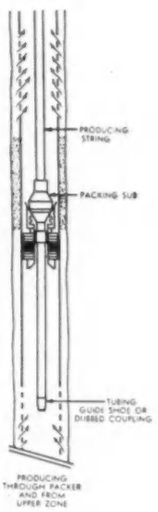


FIGURE 5

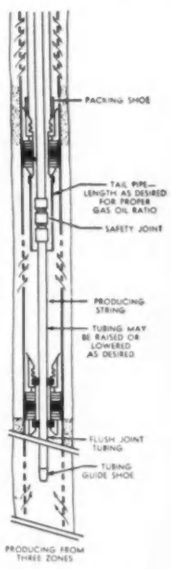

PACKING SHOE
TAIL PIPE—LENGTH AS DESIRED FOR PROPER GAS OIL RATIO
SAFETY JOINT
PRODUCING STRING
TUBING MAY BE RAISED OR LOWERED AS DESIRED
FLUSH JOINT TUBING
TUBING GUIDE SHOE
PRODUCING FROM THREE ZONES

FIGURE 6

Standco
NO-SMOKE
STANDCO BRAKE LINING
Stands the gaff and gets the job done without scoring brake rims. See page 2100 Composite Catalog.
Standco Brake Lining Co.
HOUSTON

NOTES FOR THE Equipment Buyer and User

which prevent upward movement of the packer in the liner or casing. The strain thus imposed causes the body of the packer to slide upward until stopped by the packing unit being completely expanded against the liner or casing. This movement also shears the screws holding the lower slips and forces them against the pipe to prevent downward movement of the packer.

With the packer thus anchored in the liner or casing, the running-in string is lowered until all strain is removed and the expansion joint partially telescoped. The string is rotated to the right to unscrew the setting tool, which is then pulled out of the hole.

The two-zone production method using the retainer production packer, packing head-seal type, is illustrated in Figure 5. Either threaded-and-coupled or flush-joint tubing can be used for the production string. This string is made up with a packing sub located so as to bottom the tubing at a predetermined depth. The packing sub seats in the conical seat of the plain setting head of the packer and causes the oil from the lower zone to flow up inside the tubing. Oil from the upper zone, entering the liner or casing above the packer, flows up the annular space outside the tubing.

The retainer production packer, continuous double-seal type, shown in Figure 3, has a sleeve-type seal at each end which maintains a continuous, fluid-tight seal against a string of flush-joint tubing passing through it and into the production horizon below. It is set in the same manner but uses the setting tool shown in Figure 4 for the setting operation. It requires the use of flush-joint tubing through the packer, and is particularly adapted to regulation of gas-oil ratio by raising and lowering the tubing. No packing sub is used with this type since the tubing is packed off by the oil-resistant sleeve packings.

The retainer production packer, continuous single-seal type, is similar to and set in the same manner with the same setting tool as the continuous double-seal type but has a single sleeve-type seal at its lower end. The packing sub on the production string may or may not be used. If the tubing is to be raised or lowered to regulate gas-oil ratio, the packing sub is not used. Where it is desired to provide for cleaning out the sand above the packer, however, holes are drilled just under the packing sub (which must in this case be used) and, by raising the string until the holes are above the packer, the sand may be washed out.

The safety joint shown in Figure 5 serves as a safety means for use if the tubing becomes sanded up. It is equipped with left-hand square threads and permits the string above to be unscrewed and the remaining section washed over.

With all types of retainer production packers a flapper valve may be used at the bottom to close in the lower producing sand when the tubing is withdrawn. This may be necessary because of high gas content or for some other reason.

The three-zone production method using two retainer production packers is illustrated by Figure 6. Any of the three types may be employed for the lower packer but the packing head-seal type is used between the middle and top zones. A tail pipe of proper length is attached to the bottom of the upper packer and a packing shoe designed to seat in the setting head is made up on the bottom of a flow string which is run to separate the production from the middle and top zones. With the well thus completed, oil from the bottom zone flows up through the tubing; oil from the middle zone flows up outside the tubing but through the tail pipe, the upper packer and the flow string; and oil from the top zone flows up the annular space between the flow string and the liner or casing.

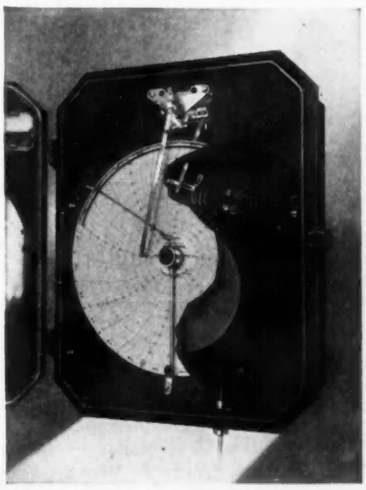
Recorders

TAYLOR INSTRUMENT COMPANIES

A new line of recorders for temperature, humidity, pressures, load, rate of flow, liquid level and receivers for pneumatic transmission systems has been announced by Taylor Instrument Companies, Rochester, New York.

Cases for the recorders are designed for face and flush mounting; standard finish is instrument-black, but white may be had if specified. Dust and moisture are sealed out by Neoprene door gaskets and a bayonet-action latch.

A mechanism combining the chart-locking device and pen lifter facilitates changing charts, and a die-cast aluminum chart plate provides a rigid surface for pencil notations on the chart. The recorders are available with 10- or 12-inch charts, and with one, two or three pens. Links, pivots and pen arms employ 18-8 stainless steel. The recorders also feature a new electric chart



New Taylor Recording Thermometer

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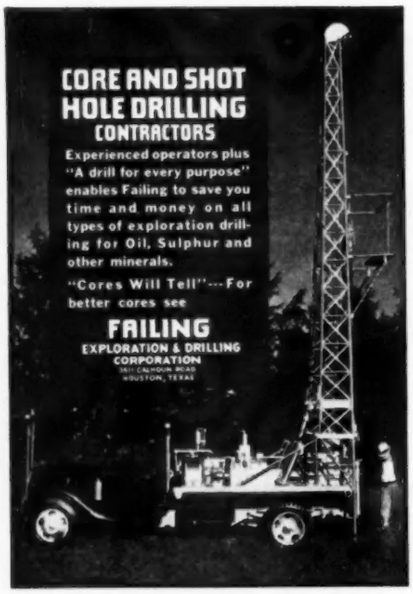
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New Landis 4¾ Receding Chaser Pipe Threading Machine

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Fairfax 1466

NOTES FOR THE Equipment Buyer and User

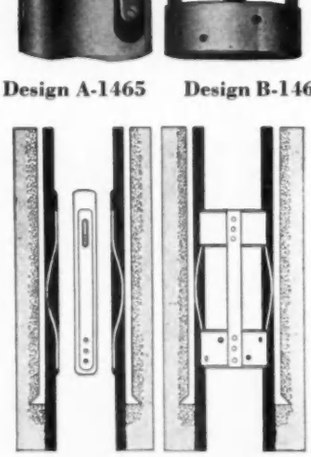
clock with improved coil design, enclosed oil-immersed gears and a slower-speed motor to give longer life. Explosion-proof types are available, and a spring-driven clock is optional.

Contactors

SECURITY ENGINEERING COMPANY

Contactors for use with installations of Securaloy drillable oil well liners to shunt electric currents flowing between the liner and casing have been announced by Security Engineering Company, Whittier, California. To be used with either cemented or uncemented liners, the contactors for cemented liners centralize the unit for even distribution of cement.

Design A-1465 **Design B-1465**



Contactors in Position

Offered in two styles, Design A-1465 mounts directly on the liner and is for use where the clearance between the liner and casing is slight. Design B-1465 is a standard slip-over type, designed to fit any size liner and intended for use when the clearance between liner and casing is sufficient to pass the contactor collars.

The contactors are designed for removal with a drilling bit so that their assembly on a liner does not impair the drillability of the installation.

Bronze Bearings

The Bunting Brass & Bronze Company, Toledo, Ohio, has issued a new general catalog of bronze bearings.

Oil Industry Boiler Sales Exceed Previous Two Years

Orders on steel boilers for oil industry use during the first three months of the current year ran well ahead of the same period a year ago, and two years ago, the United States Department of Commerce reported last week.

March orders for 18 units with a combined 23,217 square feet of heating surface brought the quarter's total to 54 units with 62,734 square feet heating surface, the department said. This is approximately 100 percent over the 27 units with 34,432 square feet of heating surface recorded during the first three months of 1939, and more than 10 percent over the 48 units of 57,824 square feet of heating surface during the same period two years ago.

International Nickel to Enlarge Huntington Plant

The International Nickel Company has announced a $132,000 program for physical improvements at the Huntington, West Virginia, plant.

The program calls for expenditure of $63,000 in the cold draw department, where an additional car-type electric heat treating furnace and other equipment will be installed, and $69,000 for erection of a brick building to double the area occupied by the chemical and physical laboratories. The new building will permit concentration under one roof of metallurgical and physical testing equipment, as well as technical personnel, now temporarily located in various departments.

Pipe Covering

General Paint Corporation, 3091 Mayfield Road, Cleveland, Ohio, has published the fourth edition of its "Book of Pipe Protection," giving descriptions of the Hill-Hubbell process of mill coating-and-wrapping and lining of steel pipe. Twenty pages of illustrated descriptive material is supplemented by 14 pages of specifications and prices.

V-Belts

L. H. Gilmer Company, Tacony, Philadelphia, has issued a 96-page "Guide to Efficient V-Belt Practice." The book contains new horsepower ratings for multiple belts, a section of sheave information that covers also flat pulleys for V-to-flat drives, adjustable diameter and companion sheaves, an engineering section for designing special drives with formulas, description of special-use V-belts and handy tables for engineers.

Electric Motors

General Electric Company, Schenectady, New York, has issued Bulletin GEA-3345 on synchronous motors and control for part-winding starting. The equipment is described as suitable for installations where controllable low-starting currents are desirable. Simplified control equipment, continuous circuit starting, low starting current and adaptability to multipoint increment control are given as advantages of part-winding starting.

NOTES FOR THE Equipment Buyer and User

Charles B. Leyendecker Joins Hunt Tool's Sales Staff

Charles B. Leyendecker, effective May 1, resigned as Gulf Coast district editor of The Oil Weekly to join the sales department of Hunt Tool Company, Houston. During his six years with the oil publication, he reported Texas and Louisiana Gulf Coast field developments weekly, and contributed a number of feature articles. He came to Houston from his home in Waco, Texas, following his graduation from Vanderbilt University at Nashville, Tennessee.

C. B. Leyendecker

Morse Chain Opens Houston Office With Koch in Charge

Morse Chain Company, Ithaca, New York, has announced establishment of a branch office at 1418 Polk Street, Houston, under the direction of Bob Koch, formerly at the company's home office as assistant sales manager.

Complete stocks of the company's roller chain, silent chain, sprockets, flexible couplings, and industrial clutches will be stocked at Houston.

Bob Koch

Reed and Wilson Re-elected to Head General Electric

At a meeting of the board of directors of General Electric Company April 26, Philip D. Reed was re-elected chairman of the board and Charles E. Wilson, president of the company. All other officers were also re-elected.

Lane-Wells Sells Directional Drilling Patents to Eastman

Rodney S. Durkee, president of Lane-Wells Company, Los Angeles, has announced the sale, effective April 16, 1940, of the company's directional drilling equipment and patents to Eastman Oil Well Survey Company, Dallas.

The orienting patents, under which Eastman Oil Well Survey Company is licensed, will be retained by Lane-Wells Company, and the latter will continue to manufacture orienting equipment for export sale and to perform both oriented and magnetic surveys.

The technical oil field services of Lane-Wells Company includes gun perforating, electrolog, and magnetic and oriented oil-well surveys in all fields in the United States and Canada. The company manufactures packers, liner hangers and bridging plugs for foreign and domestic sale, and gun-perforating and survey equipment for export sale.

Riggs Named Bucyrus-Erie Spudder Representative

Raymond C. Riggs has been appointed sales representative in Texas and Oklahoma for the line of spudders recently introduced by Bucyrus-Erie Company, South Milwaukee, Wisconsin. He will make his headquarters at 1212 Magnolia Bldg., Dallas.

A petroleum engineering graduate of Centre College, Danville, Kentucky, Riggs had been associated with his father, E. R. Riggs, until the latter's death several years ago. He has worked at drilling, production and refining operations.

R. C. Riggs

D. L. Thebedaux Added to W-K-M Sales Staff

W-K-M Company has announced appointment of D. L. Thebedaux to the company's sales staff with headquarters in Wichita Falls. He will serve the North Texas territory. Thebedaux has long been associated with various branches of the oil industry and has worked in practically every leading oil field in the United States and Mexico. For the past few years he has been a driller in Oklahoma.

D. L. Thebedaux

Manning, Maxwell & Moore Shift Heath to New Orleans

Manning, Maxwell & Moore, Inc., Bridgeport, Connecticut, has announced the transfer of R. F. Heath from the Houston territory to the New Orleans territory, which was formerly covered by Jack Schuyler. Heath was formerly located in the New Orleans area before taking over the Houston territory.

Yale & Towne Advances Morgan To Philadelphia Plant Manager

The Yale & Towne Manufacturing Company, Philadelphia, has advanced James C. Morgan from general sales manager of its Philadelphia division to general manager of the Philadelphia plant.

Morgan came to the company in

OTIS AUTOMATIC PARAFFIN SCRAPER BRINGS HARMONY TO *Music Mountain*

Pennsylvania's Music Mountain field is the latest of many widely separated fields to find relief from paraffin accumulations by installing Otis Automatic Paraffin Scrapers.* *The initial cost is the only cost.* Spiral scraper remains in well, ready at regular intervals to utilize well flow on upward trip for scraping off and flowing out paraffin deposits. A combination stop and shock absorber, an exclusive Otis feature which limits scraper's downward course, may be set at any depth without pulling tubing.

*By Otis Eastern Service, Inc., Wellsville, N. Y.

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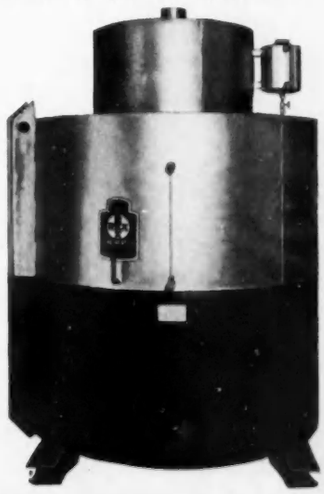
PRESSURE CONTROL
INCORPORATED
DALLAS, TEXAS

REX PRE-HEATER

Saves 25% Fuel!

Users consistently report fuel saving up to 25%. For complete details see Pages 2146-2147 of your Composite Catalog.



THE REX COMPANY
P. O. BOX 2431 HOUSTON, TEXAS
Mid-Continent Distributor:
The Continental Supply Co.
California Distributor: The Howard Supply Co.

1920 from C. B. Hunt Company to take charge of electric truck sales. Electric truck and hoist divisions were later combined in one unit under his supervision.

C. E. Swindler Dead

C. E. Swindler, Tulsa district sales manager for Jones & Laughlin Steel Corporation, died April 25 after a brief illness. He had been active in a sales capacity in the district before establishment of the Tulsa office in 1937.

Thermostats

General Electric Company, Schenectady, New York, has issued a 4-page bulletin, GEA-1265D, describing its line of thermostats with temperature-setting indicator for use with midget heating units.

Roots-Connersville Names New Pump Representatives

J. B. Trotman, manager of the Turbine Pump Division of Roots-Connersville Blower Corporation, Connersville, Indiana, has announced appointment of the following new territorial representatives:

J. T. McKinney, 1122 Pointview Street, Los Angeles, handling sales in southern California, and P. J. O'Meara Company, 50 Hawthorne Street, San Francisco, for sales in northern California and part of Nevada.

L. S. Pawkett & Company, Insurance Building, San Antonio, for sales in south central Texas.

Power Machinery Company, 215 North Detroit Street, Tulsa, for sales in Oklahoma.

J. Harry Phelan of Beaumont, former secretary and treasurer of Yount-Lee Oil Company, recently elected to the board of directors of Norvell-Wilder Supply Company.

Thomas C. Wilson, Inc., Moves to Long Island City

Thomas C. Wilson, Inc., manufacturer of tube and pipe cleaning equipment for some years located at 55 Vandam Street, New York, has moved its plant and offices to larger quarters at 47-28 37 Street, Long Island City, New York.

Booth Placed in Charge of Cutler-Hammer's Houston Area

G. E. Booth, manager of the St. Louis district office of Cutler-Hammer, Inc., has announced that E. F. Meyer is now in charge of the company's Houston territory with headquarters in that city.

A graduate of the University of Wisconsin with a B. S. degree in electrical engineering, Meyer joined the company shortly after leaving school and worked in the experimental and testing departments of the Milwaukee plant. He later joined the Milwaukee district sales office as sales engineer, and from there went to the St. Louis territory.

G. E. BOOTH

Your Gracious Host.. From Coast to Coast

IN NEW YORK..

The Gotham

IN CHICAGO..

The Drake

The Blackstone

IN LOS ANGELES..

The Town House

IN BELLEAIR, FLA..

Belleview Biltmore

KIRKEBY HOTELS

Squeaks from the Bull Wheel

Knees Is Nize

"Her niece is rather good-looking, eh?"

"Don't say 'knees is,' say 'knees are'."

No Success Story

New Playwright (as the audience hiss and groan)—It's hard to tell just what the public wants.

Manager—it's easy enough to tell in this case; it wants its money back.

Helpful Clue

Old Lady in Telephone Booth: "Operator, I want you to give me the number I asked you for last Wednesday. I can't think what it is just now, but you'll remember that it had a nine in it."

Not Aunty

"I want some flesh-reducing medicine."

"Anti-fat?"

"Naw, it's for my uncle."

Back to Earth

The aviation instructor, having delivered a lecture on parachute work, concluded:

"And if it doesn't open—well, gentlemen, that's what is known as "jumping to a conclusion."

Strategy

Swapping yarns with a couple of wholesale men recently, we heard how one of them found himself in a cab in a strange city, late at night, without a cent in his pockets. Naturally, somebody asked what he did.

"Stop at the next cigar store so I can get some matches," I told the driver. "I've dropped a five dollar bill somewhere in this cab."

As the yarn went on, the driver stopped, and the wholesaler got out and entered the store.

"What did he say when you came out?" someone wanted to know.

"When I came out," grinned the narrator, "the cab was gone."

Poor Feller

"How many runs did they get off you in the first inning?"

"Only six."

"And in the second?"

"Eight."

"And in the third?"

"Aw, in the third I blew up and went all to pieces."

Burnt Offerings

"That young bride worships her husband, doesn't she?"

"Well, she places burnt offerings before him three times a day."

Poor Father

"So God has sent you two more little brothers, Dolly?"

"Yes, and he is the only one that knows where the money's coming from. I heard daddy say so."

That's All

"So they finally got married?"

"Yup—it's all over but the shooting."

Of Monotony

I have always maintained, that no two people on earth think alike.

"You'll change your mind when you look over our wedding presents.

Too Deep

Well Sonnie, what were your lessons about today?

George Washington. But, mother, I don't understand. If George Washington was as honest as everyone says he is, why do they close the banks on his birthday?

A Bad Prospect

Two girls, who had been chums throughout their early years, were married at the same time, and one of them went to live in another city. A year later the other one visited her, and found her the mother of twin baby girls.

"Do you know," said the mother of the twins, "there was something very queer about it—you might almost call it a coincidence. As we left the church we passed a phonograph store that was playing some old records and one of the songs we heard was 'Two Little Girls in Blue.' "

The other bride turned pale, and seemed about to faint. "Why, what's the matter?" asked her friend.

"When Bob and I left the church we heard a band playing the sextet from 'Lucia.' "

Maybe She Did

Fanny was thoroughly angry at her swimming teacher.

"The fresh thing!" she exclaimed. "After I won the race, he came to me and said, 'My dear, you kept your end up magnificently.' "

Shivering

Many are the adventures I've been through in my hunting expeditions. While I was in Alaska I hunted bear.

"Good Heavens! but didn't you get awfully cold?"

Definitions

Papa, what is reason?

Reason, my boy, is that which enables a man to determine what is right.

And what is instinct?

Instinct is that which tells a woman she is right, whether she is or not.

Long and the Short

She is the sort of a girl who would go to any length to get married.

And judging by her clothes, to any shortness.

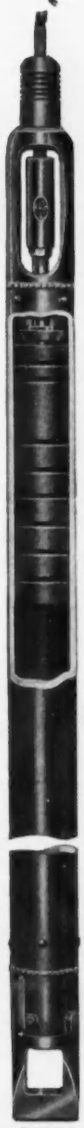
Evening Up

Is she progressive or conservative?

I don't know. She wears a last year's hat, drives a this year's car, and lives on next year's income.

FOR Sand Choked Wells

CLEAN OUT WITH A MILLER



With the sand and sediment removed, production is increased—that's why MILLER Sand Pumps are bringing in more oil dollars throughout the World!

The MILLER is made in diameters of 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9 inches and lengths of 20, 25 and 30 feet. 5/32-inch wall thickness in REGULAR Type. ¼-inch wall tubes HEAVY DUTY Sand Pumps.

INTERCHANGEABLE BOTTOMS
To Meet Every Condition

- **BAILER BOTTOM** — With the Bailer Bottom installed the MILLER is quickly changed to a Bailer giving you a combination of either Bailer or a Sand Pump in one tool.
- **SAND BOTTOM** — Used when tools are run and when well is shot to quickly remove loose material.
- **STAR BOTTOM** — Used for cutting the sand loose.
- **CHISEL BOTTOM** (In Pump) — With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

Write for Descriptive Folder and Price List

See Pages 1672-73 COMPOSITE CATALOG

MILLER Sand Pump Co.

General Offices and Factory:
OKLAHOMA CITY, OKLAHOMA
1524 S. E. 29th P.O. Box 4516 Tel. 7-6884

Branches:
SAPULPA, OKLAHOMA—Tel: 341
KILGORE, TEXAS—Tel: 545

FOR SALE BY SUPPLY STORES EVERYWHERE

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